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THE DETROIT

REVIEW OF MEDICINE

AND

PHARMACY.

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VOLUME V.—1870.

DETROIT:
FREE PRESS BOOK AND JOB PRINTING HOUSE.
1870.

DETROIT
Review of Medicine and Pharmacy.

Vol. V. JANUARY, 1870. No. 1.

THE MORE RECENT OPINIONS ON THE CONDITION KNOWN AS CHRONIC INFLAMMATION OR CHRONIC CONGESTION OF THE UTERUS.

A paper read before the Wayne County Medical Society, by Henry F. Lyster, M. D., Detroit.

There are few morbid conditions met with in general practice of greater interest to the physician, both on account of their frequency among those whom we are accustomed to consider our best constituents, as well as from the serious inroads made upon the bodily and mental health and constitution of the individual, than the diseased conditions of the unimpregnated uterus and its appendages. It behooves the physician to be acquainted with the normal appearances and conditions to be able to detect any variation from the normal state, and also to be familiar with the writers upon gynecology, and to treasure up those lessons received through the more severe school of experience. Woman furnishing in herself so large a proportion of our patients, is to so great an extent influenced in her whole being by the uterus and its appendages, and by the functions appertaining, that nearly all her ailments are more or less directly or indirectly related to them. In most instances, it is true, that influence is slight, but in others it is very decided.

When the uterus is deranged in its functions or conditions, it is, many times, only a temporary derangement, which passes away under the guidance and care of natural laws and changes; other cases simply require the recognition of the trouble by the woman herself to enable her to favor those efforts on the part of nature to induce a normal condition. In other cases, a temporary trouble aggravated by our present customs and fashions, which, in so many instances, set at defiance all sanitary considerations, where ignorance is not pleaded, and, in too many instances, the laws of nature and society are disregarded, may develop chronic diseases affecting the whole economy of the individual.

No department of medicine has made greater advances within the last few years than gynecology, and, judging from analogy, we may expect the next fifteen or twenty years to teach us fully as much as has been already developed, and to clear up much that at present is enveloped in obscurity and error.

Until within the last few years the whole subject of gynecology has been considered under the head of obstetrics, with but little attention paid to the unimpregnated uterus and its appendages, but latterly the specialty of gynecology is being rapidly separated from obstetrics. The rediscovery and use of the uterine sound by Prof. Simpson, together with the use of improved specula, and favorable positions for the patient, and conjoined manipulation and rectal exploration, with increased knowledge of uterine pathology, enables the physician of the present time to determine many things which a few years since were entirely misunderstood and unappreciated. There can be no doubt but that many cases of uterine disease were formerly overlooked and a mistaken diagnosis made, when now all would be certain and correct. No doubt but that a large proportion of the cases of "spinal complaint," so called, were, in reality, either cases of chronic metritis, or were dependent upon an atonic condition of the colon, which would now be easily recognized. With the rapid advancement of gynecology, much that is given out to the profession is founded upon misconceived and erroneous theories, and is experimental and does not stand the scrutiny of other observers and the crucial tests of time. This will ever be the case in any science or art where energy and activity are displayed.

It is an old and trite saying that "a physician learns as much by his failures as from his successes," and it holds good when applied to those who are considered leaders in the department of uterine pathology and therapeutics. The advocates of the pessary, the advocates of incision of the cervix, the advocates of caustics, of depletion, of dilatation, of rest, have each and all carried to so great an extent their professional hobbies that the question as to whether they have not done, in the majority of instances, as much harm as good, is by no means settled in the minds of many. "*Tempora mutantur et nos mutamur in illos.*" The pendulum of professional opinion on many of these important measures has long since reached the extent of its arc and has begun to swing backward with the velocity of its progressive movement. You hear the pessary denounced on all sides; anathemas are showered upon it from every direction, and we must confess that it deserves the most of them. You hear the use of caustics cried out against, and as much blame attached to nitrate of silver as if it was truly the lapis infernalis and was responsible for the cicatrices and obliterated cervical canals which sometimes follow its use. The caustic potash is accused of having melted away from the view of modern uterine pathologists the larger portion of the vaginal cervix, and of having given origin to metro-peritonitis and pelvic cellulitis. The recent brilliant operations, such as incision of the cervix for the cure of dysmenorrhœa, flexions and sterility, have already fallen into comparative disuse, and their distinguished author and his leading followers, who consider the uterus an organ wholly given over into the hands of the surgeon, have doubted if they have not done fully as much harm as good, considering all the cases in which they have operated. I will not here do more than simply name clitoridectomy, an operation having at the present time no advocate whatever left among gynecologists.

The majority of the profession are still working in the vague and uncertain light which comes down through the older writers, and from a want of ordinary knowledge of diseases of this region recognize nothing, and refer well marked symptoms of uterine derangement to some imaginary morbid condition of some other organ. They grope in the darkness of a digital examination, without the *tactus eruditus* necessary to derive therefrom any accurate information, or view, in the misty twilight of an unfamiliar speculum, a field under any circumstances to them presenting an unknown landscape. On the other hand, a few, in the glare of the new light so suddenly let in upon their vision, are in some cases led astray by appearances, and see localized, all the ailments which feminine flesh is heir to. The physician who views every woman demanding his professional services, through the medium of a speculum, can see very little else the matter than some affection of the uterine os or cervix, and can not readily avoid discovering in slight erosion and redness the citadel of the disease, against which he must steadily advance his trains of remedial appliances, reminding us of old Polonius, in the facility of recognizing, under any circumstances, appearances "very like a whale." On the one hand, we have in the profession a lack of scientific knowledge and practice, and on the other, error in trusting too much to local appearances and depending too much upon local treatment. This certainly will not gain ground in a profession claiming the title of learned, that the family medical attendant, whose relationships are second only to those of the members of the family, should avoid undertaking the management of all cases of uterine diseases and derangement, other than those comparatively rare cases which demand the surgical interference of an expert. The idea that because one physician carries a speculum and scarificator in his pocket, all cases of uterine derangement should be handed over to him for treatment, and a mortgage thereby given upon our own best constituents, is utterly preposterous. It is true that in a large general practice members of the profession will, from the opportunities afforded and from their own personal qualifications and tastes, pay that attention to uterine pathology and treatment which will entitle them to consultations and to the operations in difficult cases, provided they have proved themselves successful in their own practice. The successes of men like Emmett and Sims in treatment of fistula, and of Atlee, I. Baker Brown and Wells in the removal of ovarian cysts, are only attained by special experience and by devotion to uterine surgery. There is no department of surgery which requires a more thorough understanding of the anatomy and pathology as well as the physiology and histology of the region, nor any, which in operative procedures requires more tact and readiness in manipulation.

The limited time afforded, will only enable me to take a glance at the pathology of that most frequently encountered condition known as

CHRONIC INFLAMMATION OF THE UTERUS.

All writers on gynecology agree in this one point, that inflammation is the keystone of the arch, as Dr. Thomas expresses it, upon which rests the knowledge and usefulness of the gynecologist, always reserving from the term inflammation certain qualities under other circumstances and conditions usually attributed. From a misunderstanding of the meaning of the term inflammation, much diversity of opinion exists as to the frequency and importance of chronic inflammation of the uterus. By many it is supposed to signify an increase of vital processes, simply exaltation of function, a rapidity of change, an excess of life; by others, arrest of function, interference with vital activity, checking of physiological processes, abnormal development; and it is rather with the latter opinion that modern gynecologists will be found to agree. To enter on the consideration of this subject, into an exhaustive investigation, with all the various consequences, dependent in the majority of instances, upon it, such as retro and anti-version, retro and anti-flexion, lateral displacements, prolapsus, dysmenorrhœa, menorrhagia, and their several modes of treatment, with the various positions in which the patient should be placed, together with a description of the necessary mechanical and medicinal agents used, would more nearly fill a volume than a paper of moderate limits. Still we may have time to review at least some of the more important points of the pathology.

Inflammation in general may be defined to be a *perverted action* of the capillaries of a part, attended with discoloration, pain, heat and swelling, and *perverted function*, with a tendency to effusion of deposits or new products; in addition to this there is also an *altered condition of the blood* and *nervous fluid*, as an important element of the morbid process.

Inflammation may not be the best term to use in the discussion or consideration of this chronic morbid condition, but it is the most appropriate and convenient one to apply; but as Graílly Hewitt, President of the London Obstetrical Society and author of a work on Diseases of Women, observes, it must be used with important reservations, and to this opinion such men as Scanzoni, Simpson, Bennett, Thomas, Sims, Emmet, Byford, and in fact, nearly all modern gynecologists agree. There is certainly something more than ordinary chronic passive congestion or engorgement of the organ; and yet there is not, at least generally, that perverted alteration of vascular tissue which produces exudation of liquor sanguinis, which, according to Bennett, characterizes inflammation; at least inflammation of this character in the parenchyma of the uterus is rarely met with. S. Peaslee, of New York, is of the opinion that the term chronic inflammation should be discarded and that of chronic congestion substituted, as coinciding more nearly with the pathology.

Scanzoni says that the condition known as chronic inflammation of the uterus, is not, in many cases, an inflammatory one in the true sense of the word, but it is constituted by *alterations of nutrition*, such as we frequently meet with in other organs, as the effect of long continued venous hyperæmia. T. Gaillard Thomas, in his recent and most excellent work on Diseases of Women, remarks that inflammation of the uterus, as of every other organ or part, consists in congestion, which results in change of secretion, an alteration of nutrition, and sometimes a development of exhuberant homologous tissue. It matters not whether this action be acute or chronic in its course, the characteristics of its existence are always those just mentioned as pathological evidences, while pain, increase of animal heat and swelling constitute its rational symptoms. Should mere blood stasis exist, unaccompanied by the circumstances mentioned, congestion is the name applied to the condition; while, if excessive generation of homologous tissue occur without appreciable congestive alteration of secretion, etc., the term hypertrophy conveys the idea of excessive development uncomplicated by inflammatory action. There is in this condition of chronic inflammation of the uterus neither a tendency to the production of pus nor to the absorption of effused materials. The vessels may remain an indefinite length of time varicose or distended, an abnormal supply of nutritive material may be furnished to the cellular and intercellular substances and proliferation or excessive growth of connective tissue be the result. Grailly Hewitt says the morbid processes which we meet with in this organ are alterations in growth, irregularities in growth, slight modifications of natural processes, and simply a perversion of nutrition. The physical changes most frequently resulting from this chronic inflammation of the uterine tissues are congestion, undue sensibility and hypertrophy, and this same understanding of the term will apply when we consider the organ as a whole, with its mucous membranes and secreting structures.

The condition of chronic inflammation of the uterus is not a sequence of an acute inflammation of that organ. This is true when the term is limited to an inflammation of the parenchyma of the body of the uterus, as chronic inflammation of the neck is not unfrequently a sequence of acute inflammation. Acute inflammation of the body of the uterus is extremely rare, hardly ever arising except from abrupt cessation of the menses, or from abortion or labor, although occasionally induced by external causes. Chronic inflammation for its inception depends sometimes upon mechanical conditions which result in arrest of circulation, but is more frequently due to some peripheric or central cause, which produces a loss of power in the vaso-motor, incito-secretory and incito-nutritive nerves, followed by varicose vessels, distended intercellular ducts and effused blood elements, as complications preventing a return to its normal condition. We have to study the minute pathological anatomy to understand the physical conditions found so different from each other, and yet depending upon inflammatory action. The enlarged condition of the uterus usually observed in chronic inflammation can not be called an hypertrophy; when it is normally increased in size, with the ovaries at regular intervals of time, known as the menstrual periods, it is not hypertrophied;

the extraordinary development peculiar to it, which is observed when gravid, is true hypertrophy of the uterus.

The physical changes which exist in chronic inflammation of the uterus are not always the same; there may be with increased bulk textural change, or there may not be; or there may be textural change without much change in size. These changes exist rather in degree than in kind. In the one case the uterus is engorged, chronically congested, vessels enlarged, walls thickened; in another variety the tissues are indurated, while the uterus is generally larger than normal, and this induration may be limited to either body or cervix; this stage comes only after repeated and long attacks of congestion. In some cases of chronic inflammation the size is diminished and the organ becomes atrophied, though this is seldom observed.

The excessive secretion of the mucous surfaces and excessive activity of the cervical glands may, under many circumstances, be considered as inflammatory conditions. When the mucous tissue is inflamed the submucous tissue will soon participate to a certain degree in the morbid process. The inflammation may not only locate itself in the mucous membrane or in the parenchyma, but it may confine itself to one portion of the organ, as the body or neck.

Thomas applies the term endometritis to the inflammation of the mucous lining, and parenchymatous metritis, or simply metritis, when the parenchyma is the seat of the morbid process. Each of these he divides, for facility of consideration, into two others: 1st, cervical, and 2d, corporeal and general, and asserts,

1st. The cervix is much more frequently affected by inflammation than the body of the uterus.

2d. Metritis is generally the result of abortion or parturition.

3d. Cervical metritis is very common in matrons and multiparæ, and extremely rare in unmarried women (virgins).

4th. Corporeal metritis is the form of inflammatory disease most frequently met with in virgins and multiparæ.

5th. In chronic inflammation a part only is liable to be invaded. The body or the neck may be affected for years. In the one case the morbid process not coming down below the os internum, and in the other not going above that point.

In accordance with this view, Dr. Thomas has considered the whole subject of chronic inflammation in four chapters, and in this way has very clearly elucidated and described it. The line of diseased structure will not be found in fact to agree precisely with that of any particular structure, nor will the disease allow itself to be limited by changes in the anatomical conditions of the parts; still there is much truth in the arbitrary division referred to, though in many unsuspected cases it will be found that the tissues are involved to a greater extent than was supposed at the examination. Although the condition of the os and cervix have received more attention from uterine pathologists, the opinion is beginning to prevail that affections of the body of the uterus are of more consequence, and are fully as frequently present. I have Grailly Hewitt as my authority for this opinion, which does not quite accord with Thomas. Dr. Fordyce Barker also believes that cervical inflammation is much more frequently met with. It is rarely the case, indeed, that either can be constantly affected without the whole organ participating in the morbid change.

When the uterus is enlarged, as it usually is in this affection, it often gives rise to great discomfort from pain, dragging sensations, and a feeling of weight and discomfort from the effects of mechanical pressure upon the neighboring organs. It is usually associated with enlargement of the vaginal cervix, and, indeed, it is this portion that usually receives attention, to the exclusion of the other morbid condition. Any circumstance capable of increasing the size of the uterus gives it a lower position in the pelvis than ordinary; the subsidence allows it to press upon the rectum, and in most cases produce constipation, varied when the rectum is irritated, by dysenteric discharges, as it is, with the rest of the intestinal canal, intolerant when inflamed, of any material mechanically irritating it. Frequent micturition will be observed some time during the history of the case, when the uterus presses either with its fundus or cervix upon the bladder.

Scanzoni regards the chronic inflammation of the uterus as being chiefly in the mucous membrane, and that the submucous tissue is congested, and more vascular than normal, but not so generally involved as the mucous membrane. It is only within a comparatively recent period that the opinion has prevailed that the inter-uterine cavity became involved in most of those cases, where there was sufficient cervicitis to require treatment. At the present time this is generally recognized as established. In the opinion of many, pain is almost always an accompaniment of inflammation of the cervix, and will usually be located in the ovarian region, while in affections of the body it will not so generally be present. The treatment of this condition will form the subject of a separate paper.

ON THE IMPROVED IRIDECTOMY FORCEPS.

Read before the Detroit Academy of Medicine by J. F. Noyes, M. D., Professor of Ophthalmology in the Detroit Medical College.

Mr. President—Cases of partial or complete blindness on account of opacity of a portion of the cornea or closure of the pupil, not unfrequently come under our observation, which can be remedied by an iridectomy or the operation for artificial pupil. The idea of surgical interference in these cases, with the view of affording the patient partial or complete relief, we find had suggested itself early in the history of ophthalmic medicine, and had been put into actual practice.

The first attempt to restore vision by making an incision in the iris was performed by Cheselden nearly a century and a half ago, in a case in which the pupil had closed after an operation for couching.

Three original kinds of operation for artificial pupil are recognized, viz: incision, excision and separation. These simple methods of making the operation, by "cutting through the iris, cutting out a piece of it, or separating parts of its circumference from the choroid," have, like the operation for cataract, undergone an endless variety of modifications.

The operation of iridectomy, which is now more generally performed in these cases, and which consists in bringing a portion of the iris through an incision in the cornea and excising it, is often attended with no little difficulty, and sometimes quite baffles the skill of the surgeon. This is owing, in part at least, to the diseased and changed condition of the parts involved in the operation—the iris has lost its natural texture from disease; it is friable or rotten, or it is thickened, tense and unyielding from lymph deposits, by which it is sometimes fastened firmly to parts it touches. The operation fails not unfrequently, also, as I shall be able to demonstrate by citing a case in my own experience, on account of the want of forceps suitably constructed to enable the operator, at the moment when the blades are open, to seize and fasten hold of the iris. The case to which I would refer I was called to operate on in the early part of last May. The patient, thirty years old, was from the Upper Peninsula, and had suffered for three years from disease in his eyes, and had been six months blind when he came under my care. There was a complete closure of the pupil with lymph deposit upon the pupillary border, and also a partial leucomatous opacity of the cornea.

Making the corneal incision in my operation in the usual manner, I introduced the common iris forceps and made repeated attempts to seize a portion of the iris between the blades, but failed, the smooth curved edge of the blades applied horizontally to the iris gliding over the tightly stretched membrane upon every trial, and I was obliged finally to resort to the use of a hook. With this instrument I succeeded in tearing out enough of the iris to secure a very good opening for the admission of light. It resulted in giving to the patient sight sufficient to enable him to work at his trade.

The thought occurred to me at the time when meeting with these difficulties that had the blades of the forceps, instead of being perfectly smooth on their curved edges, been serrated or provided with teeth like those upon their extremities, instead of suffering repeated defeats, I should have found no difficulty in securing and bringing out as much of the iris upon the first trial as was included within the grasp of the open blades.

In accordance with this idea or suggestion, I have devised and employed Mr. Kuhlman, of our city, to make for me the instrument which I now show you. It will be observed that the edges of the blades which present to the iris are serrated at two points, the one at their extremities, the other a little way back, leaving an interspace which is smooth as in the common iridectomy forceps. When the blades are closed the teeth or serrations fit into one another in such a way that the edge appears quite smooth.

Since my operation, I have seen that Dr. Liebreich, of Paris, meeting with the same difficulties, as every one has who has had much experence in operating, has also invented what he calls "a modification of the iridectomy forceps," and publishes an account of the same in the first number of first volume of the Archives of Ophthalmology and Otology. The teeth, as will be observed, are constructed in the same manner as those found at the very end of the ordinary iridectomy or fixation forceps. They are placed at the extremities and also a little way back on the curved edge of the instrument, "so that when the blades lie parallel upon the iris they have the same situation as the teeth of the fixation forceps in the perpendicular or vertical position of the latter." When the instrument is closed the teeth are so concealed that the border of the blades appears perfectly smooth. Both his and mine are, I think, equally well calculated to fulfill the indications for which they were devised.

A CLINICAL LECTURE ON ACUTE PNEUMONIA.

By Geo. P. Andrews, M. D., Professor of the Principles and Practice of Medicine in the Detroit Medical College.

Gentlemen—I commend the case before you to consideration, because it is an example of a common disease, one which you will meet with early and often in practice, and also one which will be fatal or manageable in proportion as you rightly apprehend its pathology and the rules for treatment.

Pneumonia is a disease frequent and fatal in childhood, frequent and grave, though not necessarily often fatal, in later life. Much paper and ink has been expended in discussing the treatment proper to be pursued in this affection, one wing, and that until lately the larger, of the profession, holding that the antiphlogistic, so called, is the one which shows the best record of cures, while, on the contrary, others have claimed that such active measures are unnecessary. With the former, bleeding, tartar emetic and calomel were the sheet anchors; the latter, claiming that the disease is eminently cyclical, running its appointed course and terminating often in convalescence when left to nature's resources, regard medication as important secondarily, needful rather as an aid where nature is inadequate, and especially hold that inasmuch as the disease tends to prostration, often assuming the typhoid form, it is all important that the physician should husband rather than squander the forces of the system. I conceive that the views enunciated last, embody the true theory of the disease. I do not condemn bleeding, tartar emetic or calomel absolutely; there are conditions occurring in which these remedies will be found useful, but they are rare, and when called for must be handled circumspectly or more mischief than good will result, but to the eye quick to catch symptoms and the brain apt to read their lessons, the lancet or the antimonial may offer a resource which will turn the scale between life and death.

To return to the case before us, a young German, 28 years of age, of robust habit and good health hitherto, by trade a carpenter. Having been exposed to wet weather three weeks since, he experienced a chill in the evening; soon after, pain was felt in the base of the right lung, accompanied by frequent respiration and a short, dry cough, with occasional expectoration of tenacious sputum. Considerable fever was present, with rapid pulse. He was treated for four days by a physician in the city, evidently with mercury, as the mercurial fetor of the breath and spongy gums showed. At the time of entering the hospital, two weeks since, the stage of hepatization was established, dullness being marked over the lower lobe, although the height of the attack was reached. Slight fever, increased at night, was observed, pulse 100 to 110, countenance dusky, respiration short—about thirty per minute, pain continuing in the right side, headache, restless nights. Physical examination revealed dullness on percussion over the lower lobe of the right lung; auscultation rendered apparent bronchial respiration over the area of dullness, although coarse rales heard to a certain extent manifested the commencement of the liquefaction of the exudation. To-day you see a marked improvement in the patient; the dusky hue has disappeared, the respiratory sounds have become more vesicular in their character, the skin is moist and cool, appetite is fair, and the patient daily gains strength; a few days will enable him to return to his work. Now, taking this case as a text, let us go over the ground more minutely and study the history, pathology, symptoms and treatment of acute pneumonia, leaving for another occasion the consideration of the complications and accidents sometimes observed.

Pneumonia, or pneumonitis, is an inflammation seated in the parenchyma of the lung. Following the rule that inflammations are limited to structures anatomically similar, it usually involves the vesicles and bronchioles alone, which form the peripheral terminations to the respiratory tract. The tissue lining these cavities can scarcely be considered as a mucous membrane, inasmuch as it contains no muciparous glands. Its epithelium is of the squamous variety, and the products of inflammation vary materially in their character from those of the bronchi and trachea, which are lined with cylindrical and ciliated epithelium, and supplied liberally with mucous glands. As we shall presently consider, the products of inflammation within the vesicles and bronchioles consist of fibrinous material analogous to the plastic lymph occurring as the result of inflammatory action in the serous membranes, though with this difference, that it does not become organized, and in this it assimilates to the products of mucous inflammations.

There are three periods in the history of acute pneumonia, anatomically considered; first, that of *engorgement*, during which we find the capillaries of the affected portion of the lung distended with dark blood, nearly in a condition of stasis, and also the commencement of exudation into the intercellular tissue. This period rapidly passes into the second, that of *hepatization*, wherein the exudation has become fibrinous, filling the vesicles and bronchioles with firm plugs, which are more or less colored by the presence of blood globules. As the active process of inflammation and the hyperæmia diminishes, the deep red hue of the tissue gradually fades, and as the hæmatin is absorbed assumes a grayish tint, and the exudation softens. The microscope shows, during the red stage, the presence of a multitude of young cells, which are probably developed from the epithelium of the walls (*Niemeyer*), together with blood corpuscles, scattered through the amorphous fibrin of the exudate. As the gray stage is developed, we find the cells and fibrin undergoing fatty degeneration. The walls of the vesicles now secrete a fluid material, which tends still further to soften the exudation and promote its absorption and expectoration, by means of which the product of inflammation may be entirely removed without passing into the third stage of *purulent* infiltration, which occasionally occurs as a sequence of the previous one, and is characterized by a more prolific cell formation, which presents the appearance of pus. Even at this stage, as the lung tissue is still intact, though weakened, recovery may take place.

The physical appearance of the lung in the stage of engorgement, is a deep red, more dense than normal, œdematous and non-elastic. A fresh cut surface exudes a tenacious, viscid, reddish fluid. The stage of hepatization shows the inflamed portion of the lung greatly increased in specific gravity. It sinks in water, is resistant to pressure though very easily torn, and of a granulated appearance, owing to the fibrinous plugs contained within the vesicles and bronchioles. In the third, or purulent stage, the granulated appearance is lost and the surface is gray or yellowish, and a reddish matter may be freely expressed from a freshly cut surface.

Owing to the amount of lung incapacitated for labor by the disease, an undue amount of blood is crowded into the remaining portion, and where the inflammation is extensive the general hyperæmia may be adequate to produce death. This condition, we shall see further on, constitutes one of the indications for depletion. That portion of pleura contiguous to the inflamed tissue usually participates in the disease, which is then known as pleuro-pneumonia. The right side of the heart, from the obstruction in the lungs, is usually found surcharged with blood, while the left side is abnormally empty. Tough yellow coagula are of very frequent occurrence in this disease, being found both in the cavities of the heart and the large vessels, from the latter of which long, branchiate polypi may often be drawn (*Niemeyer*). These coagula, from their appearance, are evidently not *post* or even *ad mortem* in their formation, but may have existed for days or weeks, and doubtless, in certain cases, prove the immediate cause of death.

The symptoms ushering in an attack of pneumonia are, first, a rigor, usually but one, wherein the disease differs from the onset of intermittent fever, or septicæmia, in which the rigors are repeated; elevation of temperature accompanies the chill, with quickened pulse, soon pain is complained of, usually located at the diseased point; pain may be absent, as in cases where the inflammation is deep seated, not involving the pleura; it is acute and incisive, increased by cough or a deep inspiration; it does not remain constant in intensity for a long period, but varies from time to time; it commonly ceases with the period of extension of the inflammation; the pain is often absent in aged or feeble persons, particularly if the superior portion of the lung is involved. (*Niemeyer.*)

Cough occurs early, and is one of the most constant attendants of the disease; at first it is short, sharp and dry. The patient represses it as long as possible, and this dread furnishes an aid to diagnosis between pneumonia and bronchitis. The sputum of the stage of engorgement is exceedingly viscid and somewhat frothy. After consolidation is complete, it is tinged with blood and becomes the "rusty" sputum. When resolution is established, the cough either disappears or becomes loose. Accompanying these symptoms are the usual pheuomena of pyrexia, pain in the limbs and back, headache, which often continues through the attack, injected countenance, elevation of temperature 103° to 105° F., varying from morning to evening when it is highest, from 1° to 2° F. The pulse ranges from 90 to 120 per minute in ordinary cases, and where it rises to 130 or 150 danger may be apprehended. During the stage of engorgement, the pulse is frequently large and full, but later it loses power and is small and compressible, owing in some cases to the intensity of the tissue destruction which is progressing as shown by the high temperature, but more frequently to the lack of blood in the left heart from obstruction in the lungs; while the right side and the venous system are overloaded, as shown in the dusky hue of the surface. In the face it is so characteristic as often to suffice for the diagnosis at a glance. Aside from the venous congestion, a circumscribed dusky red spot very generally appears upon one or both cheeks, where single usually upon the the affected side.

The tongue is coated with a white fur, anorexia is complete, and thirst is complained of. Slight jaundice is occasionally observed, to be referred to the venous obstruction in the lungs, reacting upon the hepatic circulation.

A singular phenomenon is presented in the urine, in the complete disappearance of the chlorides from that fluid during the aggression of the disease. It is also scanty, of high color and specific gravity, and showing in the increased quantity of urea the waste of the nitrogenous tissues. Coincident with the decline of the inflammation the chlorides again appear, as shown by the nitrate of silver test.

A very remarkable feature of pneumonia is the suddenness with which the active symptoms moderate, a few hours often sufficing to change the condition of the patient from that of acute suffering and apparent danger, to comfort and rapid convalescence. This change may occur, though rarely, as early as the third day, usually not before the fifth or seventh. In unfavorable cases, convalescence does not become established at the end of the first week, but after a slight remission the diseased action continues to extend; exhaustion soon appears and typhoid symptoms supervene; or, if the stage of purulent infiltration succeeds that of hepatization, a similar series of symptoms manifest themselves. To distinguish between these two conditions, physical examination is necessary.

Favorable convalescence from pneumonia is often wonderfully rapid, the exudation being absorbed in a few days, possibly without cough or expectoration, though as a rule both exist. Recovery from the stage of purulent infiltration often takes place, though much prolonged by the exhausted state of the system. Cases of this kind are often mistaken for tuberculosis, but the history of the disease and the location of the deposit, as well as the appearance of the patient, should suffice to determine the diagnosis.

Death may occur during the stage of engorgement or hepatization, from general hyperæmia with accompanying œdema of both lungs—the pressure upon the capillaries being adequate to impair their capacity to a fatal degree. It is very rare that the inflammatory action is sufficiently extensive to involve death in either the first or second stage; in the latter it often occurs from exhaustion, attendant upon the extensive retrograde tissue metamorphosis, without counterbalancing nutritive processes. Thus innervation fails and death follows by asthenia.

Pneumonia may terminate in abscess of the lungs or gangrene. The former will be suspected when the sputum of the third stage changes from gray to yellow, and the expectoration becomes suddenly profuse, accompanied by severe rigors. The microscope will reveal elastic fibres in the ejected matter, and percussion the presence of a cavity. Gangrene manifests itself by most profound collapse, attended by a horribly fœtid breath and the expectoration of a blackish, putrid matter.

Physical Signs.—Inspection shows no change in the thorax at rest; during respiration we observe the muscular action to be suspended over the diseased portion of the lung—in the early stage, from fear of pain, subsequently, when consolidation has rendered the lung impervious.

Palpation reveals at once during engorgement, and at times in the stage of hepatization, increased pectoral fremitus, depending upon diminution of the elasticity of the lungs, and consequently increased power of transmission by the tissues, of vibrations. If, however, the lung is extensively and densely infiltrated, the fremitus may be entirely destroyed over that portion of the lung.

Percussion during the first stage gives a more tympanitic sound than the normal vesicular resonance, higher in pitch also. As hepatization supervenes the sound becomes more and more flat and dull, until complete solidification extinguishes the resonance over so much surface as is involved in the disease. It will be borne in mind that the tympanitic sound of the stomach and duodenum may be propagated to a certain extent through the intervening tissues.

Auscultation is of the greatest importance, as by means of it our diagnosis may usually be made certain. During the stage of engorgement, until consolidation occurs, the crepitant rale is almost pathognomonic; and it is very generally present. Even after solidification has occurred at the base, as long as the inflammatory process is extending the line of engorgement may be traced by the crepitant rale. This is the finest rale described. It is variously likened to the crackling of salt in the fire, or of hairs rubbed between the fingers near the ear. It arises in the bronchioles and vesicles, and is probably caused by the separation of the walls of these cavities, which adhere by means of the viscid secretion lining them. The inspired air entering forces the cavities open with a click. After the exudation has filled a number of the air cells, the vesicular murmur is lost, and becomes progressively broncho-vesicular, bronchial, or even tubal, where the solidification is very extensive. This latter sound depends upon the fact that the solid tissue is a better conductor than the normal lung, where these sounds are broken up and dispersed by the infinite number of minute rustling cavities intervening. Bronchophony is present, and is particularly noticeable in children. Rarely, pectoriloquy and œgophony are observed. Frequently the case does not come under observation until the second stage is established; then we are able to make out our diagnosis positively from the presence of bronchial respiration, bronchophony and whispering bronchophony. During the period of resolution the rales become gradually coarser and more moist as liquefaction progresses, and with the process of absorption the vesicular character reappears, and ultimately the morbid sounds are lost. In making physical examination it is important that it should be thorough, and extend over various parts of the thorax. The disease may be exceedingly limited in extent, or the usual characters may be modified by coexisting circumstances. So important is physical examination in pneumonia, that in many cases a positive diagnosis cannot otherwise be made out, particularly when the subjects are feeble or where the disease is secondary. The symptoms may be so slight or so much obscured as to be overlooked, when the application of the ear to the chest will reveal at once grave disease.

The Prognosis, of course, depends, usually, upon the extent of lung tissue involved—double pneumonia is most dreaded. The amount of febrile reaction, which is the gauge of tissue metamorphosis, is the element of greatest importance, as, necessarily, fatal exhaustion will appear when waste has gone forward to a degree sufficient to paralyze the powers of the nerve centres. A temperature above 105° F., with a pulse above 120 per minute, indicates danger. Pneumonia is peculiarly fatal to old people and drunkards, the proportion of deaths being nearly three-fourths (*Niemeyer*). As a complication of other diseases the prognosis is grave.

Dangerous symptoms are seen in the thin, dark red expectoration (prune juice), very free and liquid sputa, absence of expectoration, accompanied by gurgling in the chest; the latter indicates paralysis of the bronchi, œdema of the lung, and death. Delirium is not necessarily a grave symptom, but when occurring late in the disease shows exhaustion of the vital forces.

Treatment.—And here, gentlemen, we touch debatable ground, but my suggestions upon this will be very brief and simple. Above all things remember that the disease is self-limited; a simple, uncomplicated attack occurring in a previously healthy person, will usually run a favorable course if left to nature's powers. Beware, then, that in your anxiety to expedite a cure you do not hinder, by over-officiousness. The best guide you can have in treatment is a *thorough* understanding of the pathology of the disease; then make out your diagnosis accurately, and the proper treatment will suggest itself almost intuitively. The tendency is to asthenia. Avoid, then, depressing measures, unless by means of them you ward off greater dangers than you incur by their use. Strict attention should be paid to alimentation, nourishment being administered early in the disease. First on the list I place milk, to which I know of none equal. The various liquid preparations of fresh meat come next. In severe cases a little nourishment, often repeated, will do more good than larger quantities at longer periods.

Bleeding will be necessary rarely. 1st. In cases where the amount of engorgement is so great as to produce impending suffocation by pressure upon the pulmonary capillaries, as indicated by a puffy, livid, anxious face, and labored and very rapid respiration; bleed at once with a full stream until relief is obtained, and your patient will bless the lancet as long as he lives. 2d. During the stage of hepatization, asthenia may be so marked as to produce partial paralysis of the nerve fibrils supplying the capillaries. The condition is similar to the one mentioned above, though from a different cause; œdema of the lung occurs, the pulse is small and frequent, respirations forty to fifty per minute, prolabia livid, and death imminent from passive venous congestion; here also you will bleed as a last resort, and it may be with benefit to your patient. I met with a case of this kind early in my experience, in an old, feeble man, who had been sick for two weeks and the purulent stage established: death was imminent, my counsel advised bleeding, which was performed, and to our mutual surprise the patient rallied from that hour and recovered; this, however, is an extreme case, and the only one in which I have seen it necessary to bleed.

The only fatal cases of pneumonia that I have met with have been in young children, and two or three where the disease was intercurrent with phthisis. Local depletion by means of leeches or wet cups is not open to the same objections as general bleeding, and may be employed where the febrile action is intense, with severe pain and short respiration; the application of the wet, or even the dry, cups, will be accompanied usually by great relief.

Niemeyer and Smoler recommend the use of cold compresses, renewed every five or ten minutes during the active stage of the disease; though disagreeable at first, great relief to the distressing symptoms is experienced in a few hours, and it is claimed that the further course of the disease is very favorably modified and the term of illness much shortened. Warm fomentations by means of hot wet flannels, or poultices, are of very general application, and tend to promote diaphoresis. The oiled silk jacket, applied early and worn until convalescence, fulfills the same indications more agreeably.

The cardiac sedatives, veratrum viride, digitalis and gelsemium sempervirens, are all lauded for the purpose of controlling the morbid activity of the circulation. My own preference, after considerable experience, is in favor of the gelsemium, given in doses of five or ten drops every two hours until the desired effects are produced; occasionally larger doses will be required, but it is better to increase the frequency rather than the quantity given at one time.

Antimony may be occasionally given where there is great intensity of the febrile reaction, and it will aid other sedatives and promote diaphoresis; but its tendency to produce depression will lead us to use it cautiously—generally it is not indicated.

The pathology of the disease shows us that expectorants will have little effect upon the local disorder, and the good they achieve is through their influence over the circulation and the excretions. The bowels should be kept open by mild salines, but catharsis is to be avoided, except at the outset of the attack, when it may be permitted as a derivative. Mercurials are of more than doubtful advantage so far as their specific effects are concerned, but a mercurial cathartic will be advisable when a loaded tongue, with nausea and gastric irritability, indicate portal obstruction.

Opiates are invaluable in both the first and second stages of the disease to allay pain and restlessness and soothe the nervous excitement, so often a source of distress. Its happiest effects will be exerted by small, frequently repeated doses.

Constant watchfulness is needful to guard against the tendency to asthenia, and support, by means of food, must be afforded at an early day. Carbonate of ammonia may be given as soon as the stage of hepatization is established, and continued steadily through the attack. I have found cases so treated to progress more favorably, resolution occurring earlier than where it was omitted. Another use which has been attributed to carbonate of ammonia, is that of increasing the alkalinity of the blood, and thus guarding against heart clot.

Quinine will be early and freely borne, and as soon as the febrile excitement is controlled, and convalescence progressing, iron may be added.

The syrup of the phosphates of iron, quinine and strychnia, afford a most excellent combination. For children I am very partial to the compound syrup of the hypophosphites.

The indications for alcoholic stimulants are the same as in other asthenic diseases, and the urgent call for support by the failing energies should not be waited for, but the probable need anticipated.

We not infrequently see cases of pneumonia characterized by symptoms of great depression from the outset; the vital powers are low, and the morbid process is intensely asthenic, as shown by the feeble heart beat. This form is often denominated *typhoid pneumonia.* Its treatment must be stimulant from the initial chill—carbonate of ammonia, quinine, wine and concentrated nourishment, must all be skillfully played off by the physician against the tendency to death. A most important point here, is postural treatment; the patient, from sheer feebleness is very prone to remain for hours in one position, and percussion will show that there is a tendency of the fluids to gravitate to the lowest point, and in this manner the lungs become mechanically blocked up, without the deposit of any active inflammatory products. The danger may be avoided by changing the position in bed frequently, not allowing the maintenance of any one decubitus for more than an hour or two at a time.

During the period of a favorable convalescence from pneumonia, as the strength returns, gentle exercise in the open air, in bright weather, is a useful adjuvant; there is little danger of a relapse after the disease is fully controlled, and unless the purulent stage has been developed, the lung returns to the perfect performance of its functions with great rapidity. Where, however, pus is found in the sputum, supporting and tonic treatment must be continued for a longer period. The various chalybeates and vegetable bitters are indicated, and cod liver oil will afford much aid. Friction over the surface with almond or olive oil will be found agreeable and useful.

You observe, gentlemen, that I have left untouched many points of interest in the consideration of this subject, and have entirely ignored many important varieties and complications of the disease, which future opportunity will enable us profitably to consider.

NOTE.—Since the above lecture was delivered, my colleague, Professor Noyes, has given me the following interesting account of his experience with pneumonia in Maine, many years since. The locality was a damp valley, where the disease was endemic and characterized by intense disturbance of the circulatory system, the indications presented calling apparently for the most active treatment. Patients were attacked with severe rigors, speedily followed by intense febrile symptoms, hard-bounding pulse, features injected, lips purple, agonizing distress for breath, and sense of impending suffocation imminent, even in the stage of engorgement the sputum appearing almost like clear blood: an assemblage of symptoms in which it would seem that venesection was imperatively demanded. Professor N. followed out at first the directions of Watson. Two members of one family were attacked—powerful young men, lumbermen—and bleeding was at once practiced, a full stream from a large opening being taken, and prolonged until full relief was experienced. Nevertheless every case died. Three of the remaining members of the family suffered from the same disease, one an old man nearly seventy years of age. In these, too, the symptoms were equally severe; venesection was not practiced, but postural treatment instituted, the laboring sufferer elevated to the sitting position, and active derivative measures taken by means of friction, induction of diaphoresis and cupping. A short time sufficed to remove the immediate danger, and the patients recovered, even without the use of antimony. Further experience in the same region proved that depletion was illy borne, the disease proving fatal in a larger proportion of cases, and where recovery was accomplished, running a longer course. G. P. A.

Selections.

PARACENTESIS PERICARDII.

By T. Clifford Allbutt, M. A., M. D.

GENTLEMEN—It is now two years and a half since I advised the operation of paracentesis pericardii in the case of a patient in the Leeds Infirmary who was at the point of death from effusion into the pericardium. The case was an acute one, and the operation was brilliantly successful, if I may be allowed to say so. The particulars were published in the *Medical Times* for November 3, 1866; and Mr. Wheelhouse, who operated for me, also read a paper on the case to the Surgical Section of the British Medical Association at its last meeting. I shall now describe to you, and comment upon, an unsuccessful case of the same kind, in which Mr. Teale twice operated for me.

On the 29th of April last I was urgently called to see Miss H——, a patient of Mr. Mann's, who was suffering from pericarditis. Mr. Mann had been called to her but a short time previously. The patient, a weakly girl, twenty-seven years old, had been suffering from slight rheumatic pains for some days; medical advice had not been sought, and Mr. Mann, on his arrival, found that pericarditis had silently crept on, and that the patient was in much danger; the pains in the limbs had almost entirely and rather suddenly ceased. At the time of my visit I found the patient suffering from what Jaccoud has well called the "paralytic form" of pericarditis. The girl was crouched on her left side; her face was deadly pale, very anxious, and covered with a cold sweat; her lips bloodless, her hands and feet cold, her respirations 90 in the minute, and there was some tendency to agitation. She clutched at the left breast, and complained of dreadful oppression at that part. On examining the chest as much as I dare, I was able to verify Mr. Mann's diagnosis, and to ascertain that the pericardium was greatly distended with fluid. There was evidence also of mitral regurgitation, for the first sound of the heart was quite inaudible, and a faint blowing murmur, synchronous with the systole, might occasionally be heard at the apex. The lungs were everywhere resonant, except over a small region at the left base behind, where there was some deficiency. Moist sounds were to be heard all over both lungs, before and behind; and there was cough, with some watery and mucous expectoration. Her temperature was 104°. Her pulse was scarcely to be counted, and often imperceptible. It was quite clear that we had to deal with a very dangerous form of pericarditis: a form which, like some forms of pleurisy, runs silently and quickly to effusion, rather than to coagulating and organizing exudation; a form, moreover, which, from the tendency to syncope from failure of the heart's action, has, I say, been named "paralytic." The patient was reduced indeed, to use Mr. Teale's happy parallel, to the state of one laboring under embolism of the pulmonary artery. There was the same deficiency of blood-supply to the lungs, the same congestion of the venous side with evidence of general pulmonary œdema, the same distress, and the same symptoms of poisoning by carbonic acid. I explained to Mr. Mann the operation I felt inclined to advise, but I shrank, more than I now should do, from having it performed at once. I did not expect the girl would live through the night; and, in any case, I was disposed, before operating, to try to restore her a little by cordial and supporting treatment. I said that if she survived the night I should counsel the operation. Mr. Mann most generously placed himself and his patient in my hands, to call in Mr. Wheelhouse, or do as I thought fit. The following day we found the patient with a little better force and better pulse. She had taken fairly of whisky punch and some food. Her pulse was 180, her temperature 104°, and there were the same symptoms of failing heart's action and of lung-oppression. We were now able to examine the chest carefully, and meanwhile we sent for Mr. Wheelhouse. On examining the chest in front we found dullness extending upward to the second rib fully, and to the first rib partially, on the left side. It extended laterally to the right sternal border on the one side, and downward and outward toward the axillary line on the other. Below, it reached a line drawn from the epigastrium to the axillary line. The dull space formed a triangle, of which this last formed the base line, while the blunt apex of it lay a little to the right of the middle point of the left collar-bone. The upper half of the dull space lightened up a little on inspiration, and was deadened again when the lung receded on expiration. The most complete dullness was from the root of the great vessels up to the heart's apex. A very distinct friction sound could be heard over most of this space, and the apex-beat of the heart could be felt. The apex was displaced a little downward and to the left, but was well within the base line of the dull triangle. The diaphragm was probably depressed, but neither spleen nor liver were much displaced. The apex moved a little to the left with that position of the patient—a sign which, at the time, I believed, in obedience to the statement of Oppolzer, to be diagnostic of pericardial effusion. I find, however, Gerhardt has shown that in healthy persons the apex-beat may travel about two centimetres to the left when the position is changed to the left side. I have been accustomed to believe also that a full friction-sound could scarcely persist when effusion was in quantity. In our case, however, nothing could be clearer than this, that the apex was distinctly to be felt, and the rubbing to be heard, and even felt also, while at the same time there was as certainly a great effusion. On looking up this point, I find that Oppolzer describes the initiatory rub, the separation of the parts by effusion, and the returning rub during absorption, without any qualification. Niemeyer, however, says that the rubbing sounds are not only heard when the effusion is small in quantity, but also when it is considerable. ("Sondern kommon auch bei sehr copiëser Ansammlung von Flüssigkeit in Pericardium vor.") So that the presence of extensive friction did not, and rightly did not, prevent my urging the operation. The heart sounds themselves were as the day before; the first being replaced by an exceedingly distant murmur, the second being audible, but distant. The feebleness of the heart, and the consequent syncopic tendency and lung mischief, were so great that I believed myocarditis, or even fatty degeneration of the heart's tissue, as described in pericarditis by Virchow, was present. On examining the lungs behind we found moist sounds everywhere, and resonance everywhere save at the left base, where the lung had been partially emptied by the pressure of the distended pericardium. Here air but partially entered the lung. When we had made these examinations Mr. Teale arrived, whose aid, in Mr. Wheelhouse's absence, we had fortunately secured. He agreed in our diagnosis, and willingly undertook the operation. The breathing before the operation was 84 in the minute, very shallow and anxious. The pulse was at least 180, and of miserable quality; the temperature 104°.5, and the oppression very great. Mr. Teale operated (at 5.10 P. M.) with a fine exploring trocar (No. 1 Weiss), as Mr. Wheelhouse had done. He inserted it in the fifth interspace, about an inch from the left border of the sternum, and thrust the point upward and inward until it touched the heart. He then sheathed the point, and pushed the canula well home, until the heart jerked it sharply to and fro. The trocar was then withdrawn, and the serum began to escape. The canula now slipped a little, and the flow ceased, so that Mr. Teale was obliged to reinsert the trocar, to carry the canula home again; it was then held in place. The fluid—a straw-colored serum—flowed again now, escaping rather with the impulse of the lung than of the heart. The flow, at first trickling, became more rapid as the lungs were able to expand, and change of position only seemed to aid the flow so far as it aided respiration. About five ounces of fluid were drawn off, which rather presented the characters of the fluid of hydro-pericardium than of acute pericarditis. In my former case the fluid was more of a pinkish than a straw-colored serum, and mostly coagulated after withdrawal. The operation gave our patient much relief. The breathing became much deeper and more tranquil, and settled down to 68 in the minute; the pulse gained volume wonderfully, and came down to 130; the temperature was still 104°. The facial expression improved greatly, the wrinkles smoothing, and the alæ nasi sinking. The patient was able to recline more easily, and she told us repeatedly how much she was relieved. We put a large poultice over the region of the heart, and administered a dose of morphia. On the next day I found Mr. Teale at the house, Mr. Mann being engaged elsewhere. We found the præcordial oppression still much diminished, and the aspect much less anxious. We regretted to find, however, that the lungs were not only œdematous, but fully bronchitic, for both small and large moist sounds were generally audible, and the temperature remained at 104°. It was but too clear to us that she could not survive. On examining the heart we found the area of dullness much diminished, presenting, as it did immediately after the operation, less than half its former extent. There was a tympanitic sound over the root of the heart, occupying the space of about a shilling, showing, to our great regret, that air had entered the sac. No air had entered in my previous case with the same operation. The bubble, however, was evidently small, and there was no "water-wheel" sound to be heard with the stethoscope. A louder friction-sound was audible, and the systolic murmur was much more plain. We ordered turpentine applications to the chest, back and front, ammonia, stimulants and supporting diet—which latter, by the way, had been much better borne since the relief of the pressure on the stomach.* The following day Mr. Teale, Mr. Mann and myself found the poor girl very much worse—in the state, indeed, in which I found her on my first visit. The pericardium had refilled to its former size, and with the effusion had returned the oppression, the anxiety, the shallow breathing, the almost imperceptible, fluttering pulse, the cold extremeties and impending syncope. Friction-sound was still distinctly audible, though less loud and less extensive. We felt that, although the bronchitis continued, yet this state was due in great part to the renewed effusion, and we did not, therefore, shrink from advising a repetition of the operation. The girl and her friends were willing to have the relief again. The breathing was now 78; the pulse unaccountable and fluttering; the temperature 104°.5′. Mr. Teale drew off this time six ounces of serum, which had a yellow look, and was, no doubt, slightly turbid with pus. Considerable relief was obtained, though less, of course, than before; and after the operation the breathing was 68, the pulse being 140 and very much improved in volume. Still the relief was too clearly but temporary, and the patient died in the night, of bronchitis and carbonic acid poisoning. A time was fixed for an autopsy, with consent of the friends, but on our arriving at the house, we found the mother in such distress that we did not think it right to press the matter. Greatly disappointed as we were, we were obliged to remember that science is only justified in humanity.

From this most interesting case, gentlemen, we learn again that tapping the pericardium is a very simple operation if performed with a fine trocar, as was done first by Aran. The operation with the bistoury, as practiced by Trosseau, seems to me, upon his own showing, to have been a bungle, while his objections to the trocar are inconclusive. That the heart is so delicate an organ that the mere contact of an instrument is sufficient to injure it, is a baseless superstition. Many cases are on record in which recovery has followed wounds of the heart and pericardium. So far as pain is concerned, Dr. Georges Fischer, in his recent essay on wounds of the heart and pericardium (reviewed in the May number of the *Archives Générales de Médecine*, p. 618), supports the opinion of Harvey, Ollenroth and Bamberger, that the heart is insensible. Mr. Mann tells me also that he once saw the chest wall and pericardium slit open and the heart exposed, by a suicidal maniac, so that the heart could be touched, and was repeatedly touched with the finger. The touch was painless, and the lunatic recovered, in spite of the wound and the explorations. The introduction of air into the pericardium is, however, to be carefully avoided; and on the next occasion of this kind I should advise the connection of the canula with an India rubber tube, so that the effusion may be allowed to escape under water. The refilling of the sac in this case, occurring in a weakly and probably tubercular girl, with the absence of refilling in my former acute case, occurring in a healthy man — this, and the contrast between the fluids removed, show, as we should expect, that the operation is more hopeful in frankly rheumatic cases than in cases which, however rapid, border rather upon hydro-pericardium. The ready emptying of the sac by expansion of the lung and ascent of the diaphragm in both cases, is interesting, and removes Oppolzer's objection to the operation; which is, that the sac, having no elasticity, and being placed in the unyielding chest cavity, cannot be properly emptied, or if emptied will refill. Experience shows, first of all, that even the removal of a small quantity of the effusion may give astonishing relief, and, by releasing the vessels, may allow of quicker reabsorption; and, secondly, that non-adhesion and refilling depend rather upon the tubercular diathesis or low vitality of the patient, than upon the mechanical condition of the parts.—*London Lancet.*

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* There was none of the difficulty of swallowing noticed in such cases by Stokes. Vomiting there had been.

THE INFLUENCE OF VACCINATION ON THE HEALTH OF INFANTS.

Read at the meeting of the British Medical Association at Leeds, by Wm. Squire.

THE direct object of the present inquiry is not into the expediency of vaccination; with the universality of the practice the terrible nature of small pox would become a matter of tradition, or of the rarest experience. It is proposed, in order to define more exactly what is effected by this influence that we all undergo, to subject it to the same strict investigation to which we submit other disorders, with the object, not of explaining its nature, but of tracing its affinities, and of clearing up some uncertainty as to its mode of action; of helping us to understand what part of its effects is essential to its special purpose, what is merely incidental or perhaps avoidable; while the study of the changes produced in the system of the infant during the course of vaccination, and the consequent liability to changes therein, has a practical bearing upon the health of infants.

Further inquiry is needed into the first part of the question, because we cannot yet say how much of the special immunity from small pox conferred by vaccinia is due to its incubation period, how much to its day or two of febrile excitement, how much to the formation of the areola, or to the other phenomena of its decadence. On our knowledge of the second part of the question rests our power to dispel the fears of the anxious, and to guard against the possibility of injury to the weak.

A difficulty is met with at the outset, as embarrassing to the medical inquirer as it ought to be consolatory to the public, arising out of the slight degree of illness attending the progress of vaccinia in infants. Before any approach to accuracy could be attained as to the special changes attributable to this cause a careful investigation into the circumstances influencing infantile health was necessary. The results obtained are also useful as a preliminary to the study of other infantile disorders. After estimating the effects of disturbing causes, and allowing for differences of constitution, temperament, food, and hygiene upon the health of infants, it can be shown that there is commenced almost from the moment of inserting the vaccine virus a very definite series of phenomena, fairly owing to its presence, and well indicated by the lines of temperature-change.

The first variations of the temperature line show more the difference of circumstances under which the disease commences than the special influences of a particular disease, the general tendency, however, being to a temporary elevation of temperature. To this succeeds the first special effect of vaccinia, comparable to the "sickening" for any of the exanthemata, and characterized by a uniform lowering of temperature. This has always been noticed in the best observed cases, but is indicated in all. At the same time the child, instead of being restless and wakeful, becomes dull or sleepy; the pulse and respiration are below the usual rate, and though the pulse soon quickens, the respiration continues to be either slow or shallow, so that yawning is necessitated; their may also be bronchial râles, or slight laryngismus. As long as the period of low temperature continues—and it is often prolonged by slight concurrent ailment—there may be doubt as to whether the vaccination has taken or not. During this time the original punctures disappear, and new papular elevations occupy their site; the day after, usually the fourth, these become vesicular. A steady rise of temperature commences forthwith, the child becoming lively, and seeming to be remarkably well. With the increase of temperature on the sixth and seventh day there may be some miliary or herpetic eruption, if the child be predisposed, or, more rarely, diarrhœa; the child meanwhile taking suitable food well, and even increasing in weight. Still, if other proof than the result were wanting of the progress of a disease, not only the rise in temperature, but the evening exacerbation, unusual in infants, would suffice.

On the eighth day the disease itself is sufficiently obvious. The full vesicle needs no description. With or immediately preceding the sudden increase of temperature, which is the most prominent feature of this stage, there is a remarkable acceleration of pulse and breathing; these having been 120 and 40 at first, and 120 and 30, or less, on the third day, are now 160 and 60, and temperature is over 100°. When the latter, in one case, had reached 102°, the former were 200 and 80. This was in a child nine months old, and in hot weather. In younger children the alteration of pulse and respiration is hardly so marked, yet on the eighth day they will generally reach 150 and 50. The greatest constitutional disturbance and the highest temperature are before the areola is fully formed, and the most remarkable feature of this stage is the sudden fall of temperature, generally two degrees, on the ninth or early on the tenth day; so that while the arm is hot to the touch, tense, indurated, pulsating, and the restlessness and discomfort of the little patient are extreme, the temperature has suddenly subsided, and though the local process may be active, the general disease is over. There is, moreover, as in convalescence from all acute distubances of health, not only a low mean temperature, but this is easily further depressed by slight causes, and is found even with any subsequent complication, such as the vaccineous roseola; it is generally, also, lower at night. After the third week even this tendency is recovered from, so that absolutely no difference can be found, upon the most careful comparison, between children of the same age who have or have not been vaccinated.

The true position of vaccinia as an acute specific disease is made apparent by the lines of temperature variation traced during its course, and in comparing what here happens with what occurs in other zymotic diseases a close parallel is observable—first, in the period of low temperature at the commencement—a point actually observéd by me in the ingress of measles; secondly, in the excitability accompanying the first elevation of temperature; thirdly, in the duration of the febrile stage, which in most of the ailments of this class in children lasts about five days; and lastly, in the subsequent tendency toward depression. Coming to a more close analysis, this ailment has analogies with measles rather than with scarlet fever; but is more closely allied, if not identical, with the course of small pox itself (the phenomena are identical with those of inoculation, as described by Dr. Gregory), stopping short, however, at the eruptive stage, and free from its secondary fever, unless the local process be aggravated or mismanaged.

The importance of the areola, except as a sign of the previous disease, is very much diminished. It is to the uninterrupted course of this previous disease that most of the protective power of vaccination must be owing. When less than four vesicles have been produced, there is more liability to interference, except in children of great excitability, or constitutional tendency to suffer severely from this kind of affection, when dependence might be placed upon three vescicles only, with less fear of trouble from the after-consequences, which are entirely accidental, not essential to protection. The reason why vaccination will be protective against small pox if done within three days of exposure to infection is not that there is time for the areola to form, but because twelve clear days being requisite for taking this disease by infection, while only eight are required when there is direct insertion, one clear day is thus given for the establishment of the one form of disease rather than of the other.

That the age usually chosen for the performance of vaccination —namely, from two to three months—is the most suitable is shown by the greater disturbance produced by it in older children, and the slightly marked effects of it in those younger. When it is remembered that the period of trouble from the arm —the stage at which most of the mischief feared from vaccination happens—is one of depression, and that this stage is no essential part of the influence desired, it ought not to be difficult to arrest, or prevent altogether, accidents which even now are extremely rare.—*London Lancet.*

"VENTILATE YOUR SEWERS! DO NOT TRAP!"

These words form the close of a very valuable address on the influence of sewer-vapor on health, delivered by Dr. Carpenter, of Croydon, before the Social Science Association, and we think the substance of it deserves the widest circulation.

It is within the memory of this generation that typhoid fever has been distinguished from other fevers, and has been traced to sewerage. The earliest efforts of sanitarians were directed to the abolition of those collections of impurity in cesspools which formerly poisoned the earth, air and water for our forefathers; and with the introduction of water closets and of tubular drainage it was hoped that typhoid fever, at least, might be exterminated. Nevertheless, it did recur again and again, as at Croydon, because, says Dr. Carpenter:

"In the early sanitary works which were carried out under the supervision and with the approval of the General Board of Health, and under the authority of the public health act of 1848, *the consequences of sewer-gas*, not being foreseen, were not guarded against; no provisions were made to prevent its ascent into the house, or for exit into the open air, before it could reach the inside of the dwelling. The rapid spread of luxurious habits among the people, the introduction of low fireplaces and register stoves, and the methods adopted to exclude draughts by having exceedingly close-fitting windows and doors, prevented the easy exit, and its baneful influence became manifest, often without the real cause being at that time at all suspected. *It often happens that the easiest way for air to enter the house is by the sewer.*"

Then, with this state of things, "fever would recur; fever always the same in type, 'the enteric or typhoid' form, with rose-colored spots, often with abdominal complications, and always in those houses nearest to the top of the sewer (perhaps I should say generally), and farthest from the outfall."

Nor is fever the only consequence of the entry of sewer gas into dwelling houses. "Many other disorders of the system," says Dr. Carpenter, "have been directly traced to its influence—thus diarrhœa, dyspepsia in all its forms, palpitation of the heart, various forms of asthma (indeed, it may help to explain some of the vagaries of this curious disease), convulsions, especially in teething infants, headaches, both persistent and intermittent. The evils which sometimes attend or follow upon the puerperal state, as milk-fever, abscesses in the breast, and phlegmasia dolens or white-leg, are frequently caused by it. I believe that these latter cases have been so associated, from observing their frequent occurrence in new houses before the plan now adopted in our district was carried out."

In houses pervaded by sewer gas, invalids cannot recover their health, and delicate women are liable to faint away without assignable cause; not that "stink" is always complained of. A good, honest, unabashed, "solid" stink, as Dr. Carpenter calls it —one that assails the nose without ceremony—is a fair, open enemy. He gives you warning, and you open your doors and let him out, as you would a hornet. On the contrary, it is the "insidious, almost imperceptible miasma" that is dangerous; and it is deserving of notice that many miasmas do not stink *per se*, but only when, beginning to be ozonized and decomposed, they give rise to that which offends the nostrils. Dr. Carpenter illustrates this by reference to some emanations from a factory, which are often more offensive half a mile off than at the place of issue.

How, then, is this enemy so subtle and deadly to be dealt with? Most sanitarians have but one reply—put efficient traps and shut out the gas. Dr. Carpenter argues that this is useless by itself. The sewer gases must obey the laws of nature, and will find an exit at the highest point, and, unless one be provided for them, will enter houses by sinks, gully holes and closets. In the autumn of 1867, nearly 40 per cent of the 160 children of the Warehousemen and Clerks' Schools on Russell Hill, and this spring about 30 per cent of the inmates of the Female Orphan Asylum at Beddington, suffered from typhoid fever through the reflux of sewer gas by the traps.

Trapping alone, then, Dr. Carpenter concludes, is delusive; for not only may the trap become dry, but the water that seals it absorbs gas from the sewer, and gives it off into the house, and, if there be any pressure, the trap is forced. Neither is it of any use to say that sewers *ought* to be self-cleansing, that they *ought* to form no deposit and give off no gas. What ought to be and what actually is, in this wicked world, are two very different things.

The real plan is to ventilate every sewer abundantly; to have a rapid and constant circulation of air through it, so that the sewer gas may be diluted and decomposed as soon as formed. In order to effect this, in the first place every house drain ought to be ventilated by carrying up the soil pipe to the highest available point, so that it be far enough removed from windows and chimneys. Other ventilating shafts, straight and perpendicular, ought to be put to every pipe requiring a trap, so as to protect the trap from the effects of pressure. Then, instead of closing the apertures into the street sewers, they ought to be as many and as open as possible. Stagnation in sewers, whether of solid, or liquid, or gas, must be avoided, and, considering that the sewers have a higher temperature than the air above, there is sure to be a rapid circulation through them if openings enough be provided; and public safety may be consulted by placing charcoal ventilators in the line of the up-currents.

We ask all sanitarians to weigh well what Dr. Carpenter teaches. Many a house will be saved a fit of illness if an outside vent be given to the gases which are now vainly attempted to be kept from rushing out of the "nursery sink." There are other measures which conduce to the same end, as the use of carbolic acid to limit decomposition, and the use of abundance of water, so as to check the evolution of gases, and hurry off the solid ingredients of sewerage. Yet there is something dismal in the idea that, after forty years of sanitary talk and work, we must be content to let the vapors of our sewers escape into our streets, and that the ozone that ought to tint the cheeks of our town children, must be used up in decomposing the miasma of our sewerage.—*Medical Times and Gazette.*

EFFECTS OF LIGHT ON VITALITY.

In a paper addressed to the French Academy of Science, Dr. Dubunfraut examines the effect of light on vegetable and animal life. The researches of MM. Gratiolet, Cloez and Cailletet have, in a great measure, proved that the red rays of the luminous spectrum are those to which the important physiological function exercised by the sun on plants is to be exclusively attributed. The leaves in this case act as analyzers of white light; they reject the green rays, which constitute the physical complement of red ones; and it is thus the various hues under which the organs of vegetation as seen by us may be explained. If plants were exposed to green illumination only, that would be tantamount to their being in the dark. But this kind of light, which the vegetable kingdom refuses to absorb, is precisely that which is coveted by the animal. Red, the complementary color of green, is that which, owing to the blood, tinges the skin of the healthy human subject, just as the green color of leaves is the complement of the one they absorb. From this principle, so fully established by experiment, M. Dubrunfaut passes to its practical application to domestic life. All kinds of red should be proscribed from our furniture, except curtains. Our clothes, which, in point of fact, play the part of screens, should never be green, while this color, on the contrary, should predominate in our furniture, its complementary one being reserved for our raiment. In the same way he contends that the salubrious influence of woods and forests is a luminous and not a chemical effect. In support of these views, he mentions cases of patients whose broken constitutions were restored merely by long exposure to the sun in gardens deprived of trees or other obstacles to light; he quotes the instance of four children that had become chlorotic by living in one of the narrow streets of Paris, and that regained their health under the beneficial influence of the solar rays on a sandy sea-coast.—*Richmond and Louisville Medical Journal.*

SUB-NITRATE OF BISMUTH

Has been adulterated with 25 per cent of phosphate of lime, which may be detected by dissolving fifteen grains in a little nitric acid, or, better, muriatic acid, adding tartaric acid, followed by excess of solution of caustic potassa. Bismuth remains in solution, while phosphate of lime, if present, is precipitated.

Dr. Gunning calls attention to the fact that nearly all the metallic bismuth of commerce contains arsenic, and states that, in preparing the sub-nitrate, he found no difficulty in removing the arsenic if the solution of bismuth in nitric acid is so far diluted that a slight permanent precipitate is formed, which, when permitted to subside, contains all the arsenic.—*Ibid.*

PRESERVATION OF ANATOMICAL SPECIMENS.

THE process of M. Von Vetter: "Add to seven parts of glycerine at 22° one part of raw brown sugar and a half a part of nitre, till a slight deposit is formed at the bottom of the vessel. The portion required to be preserved is then plunged in, dried or not dried, and is left in the mixture for a time proportioned to its dimensions. A hand, for example, should remain eight days in the liquid; when it is taken out it is as stiff as a piece of wood, but if it be suspended in a dry and warm place the muscles and articulations recover their supleness.—*Ibid.*

ACTION OF THE PANCREAS ON FAT AND STARCH.

THE influence exerted by the pancreas upon fats appears to operate by breaking up the aggregation of the crystals of the fat and altering its hydration. It alters the molecular condition of the fat, mingling it with water in such a way that even ether cannot separate the fat from the water. A permanent emulsion is thus formed, ready to mix with a large quantity of water whenever it may be added.

The pancreas, therefore, in acting upon fat, does not decompose it into fatty acid and glycerine—the absence of the glycerine from the watery stratum, and the presence of the glycerine in the pancreatized fat of the ethereal stratum, having been demonstrated.

It is well known that, in addition to the influence of the pancreas upon fat, it has the power of converting starch into glucose by simple mixture. The property remains to a certain extent after the pancreas has exhausted its property of acting upon fat. The quantity of pancreas which, before mixture with fat, will convert about eight parts of starch into glucose, after saturation with fat, will still convert about two parts of starch into glucose. —*Richmond and Louisville Medical Journal.*

BLOOD.

DR. RICHARDSON, in a communication to the British Association, withdraws his ammonia theory of coagulation. Some recent experiments which he had made on the influence of heat and cold on albuminous and fibrinous fluids have shown him that the process of coagulation in these fluids is due to the communication of caloric force to them, and to a physical and molecular change determined by the condition of their constituent water. He further stated that, in the ordinary condition, there is a constant process similar to crystallization progressing in the living body, in the formation or construction of muscle, and a steady and persistent change of force from those parts which are solidified by cold and liquefied by heat, to those which are rendered solid by heat.—*Ibid.*

PROF. GAMGEE'S METHOD FOR PRESERVING MEATS.

THE animal, when practicable, is caused to inhale nitrous oxide gas. Before it is quite insensible it is bled in the usual way. When dressed, the carcass is suspended in an air-tight receiver. The air exhausted and the receiver filled with carbonic oxide gas, a small quantity of sulphurous acid gas is added. This process has been found successful in preserving meat, fit for the table, for weeks and months.—*Ibid.*

Pharmacy.

CHLORAL.—The attention of the medical profession has been recently called to the hydrate of chloral as a sedative and hypnotic agent. Its properties were first investigated by Dr. Oscar Liebreich, of Berlin, in a series of experiments upon animals. Chloral, in the anhydrous state, is a heavy, volatile, oily liquid, produced by the action of dry chlorine upon anhydrous alcohol. It may be regarded as a trichlorinated aldehyde, having the formula, $C_4\ H\ Cl_3\ O_2$. Brought into contact with a small quantity of water, the two unite, producing a solid crystalline substance, the hydrate in question, which is quite soluble in water, has a pungent, agreeable odor, resembling that of melons, and a somewhat bitter, sub-acrid, pungent taste. Alkalies decompose this compound, with the liberation of chloroform, and the production of a formate of the alkaline base. It was this property which suggested to Dr. Liebrich the idea of employing the agent therapeutically. He argued that the same decomposition should occur in the blood, an alkaline fluid, and expected from the gradual evolution of chloroform effects similar in character to those produced by the direct inhalation of chloroform, but less transient in duration, and less liable to be attended with danger to the patient. Administered to animals, the hydrate was found to produce, in fact, profound sleep, followed in general by no unpleasant secondary effects. Cautious trials upon the human subject showed that the same effects were produced, and these, according to the view of Dr. L., were precisely those to be expected from the gradual liberation of chloroform in the blood.

The conclusions arrived at by different observers, in regard to the physiological action of chloral, present some discrepancies, which only a series of carefully conducted experiments can reconcile.

Dr. Richardson coincides with Liebrich in regarding it a valuable anodyne and hypnotic, and admits that it produces for a brief period perfect anæsthesia, but he regards the anæsthetic action as of too brief duration to be practically available for surgical operations. He has found that chloroform injected hypodermically leads to as perfect and as prolonged a narcotism as the hydrate, without producing the disagreeable symptoms, such as nausea and vomiting, which sometimes accompanied the use of the latter agent. He concludes, therefore, that the narcotic action of chloral is wholly due to the chloroform which it disengages in the blood.

According to M. Demarquay, chloral produces hyperæsthesia, rather than anæsthesia. In his observations, the sleep induced by this drug is light, differing entirely from that produced by chloroform. The least noise or the slightest pricking rouses the patient, but he immediately falls asleep again. The sleep is generally calm, but sometimes troubled with dreams and hallucinations. It appears to be most easily induced, and most prolonged, in weak and enfeebled persons.

M. Bouchut, as the result of later experiments, in which larger doses of the chloral w[illegible] administered, affirms that in the majority of cases it produces, in sufficient doses, complete anæsthesia, permitting the application of powerful caustics, or the extraction of teeth without pain. Its hypodermic administration he condemns as dangerous, and cautions physicians against using any but the purest article, which should be quite neutral, and when brought into contact with potassium (potassa?) should liberate vapors of chloroform without coloration of the liquid.

The urine secreted under the influence of chloral is at first normal in character, but after twenty-four hours it is found to be unusually dense, and capable of reducing the oxide of copper in Fehling's solution. This is due, not to the presence in the urine of glucose, but to the elimination by the kidneys of the chloral itself. As a therapeutic agent, it is recommended by M. Bouchut to subdue the violent pains of gout, of nephritic colic, and of dental caries — in fact, wherever we are accustomed to resort to the use of morphine. In chorea, where the life of the patient is menaced by the intensity of the nervous agitation, it is the most prompt and efficacious remedy that can be employed.

As some of our subscribers may be inclined to give this new agent a trial, we copy the formulæ recommended by Dr. Liebreich:

I. As an ordinary hypnotic:

℞. Chlorali hydrati .... gr. xxxviij.
Mucilaginis acaciæ .... } aa fʒv.
Aquæ distillatæ .... }
M. Sig. At one dose.

II. As a sedative:

℞. Chlorali hydrati	ʒss.
Syrupi aurantii	aa f℥iss.
Mucilaginis acaciæ	
Aquæ distillatæ	f℥ivss.

M. Sig. A tablespoonful every hour.

III. (Hypnotic.)

℞. Chlorali hydrati	ʒj.
Aquæ distillatæ	fʒij.

M. Sig. A teaspoonful in wine or lemonade, at bed time.

In delirium, from 30 to 90 grains may be given at a dose.

Pepsine.—Dr. Long, of Dublin, publishes in the *Dublin Medical Press and Circular* the following new process for preparing a digestive fluid "definite and certain in strength, and not unpleasant to the taste." The fresh stomach of the pig, having been washed in water sufficiently to remove all particles of food, and the cardiac end removed, as affording rennet only, is cut into slips and digested for one week in as much glycerine as will entirely cover it, then strained and filtered. The resulting fluid is about the consistency of simple syrup, somewhat thinner than glycerine, of a pale sherry color, sweet to the taste, with the characteristic flavor of pepsine. A drachm of this fluid, with 15 minims of muriatic acid and an ounce of water added, readily dissolved, at 100° F., 700 grains of moist fibrine. Half a drachm to a drachm of this preparation should be a full equivalent for the ordinary dose of Boudault's (or Hawley's) pepsine, and should be combined with a few drops of muriatic acid, to be taken at meal times. This "glycerole" of pepsine ought to prove a very efficient preparation. The various solutions of pepsine in the market, prepared with sherry or other alcoholic solvents, are more or less liable to spoil, and besides alcoholic fluids interfere, as is well known, with the solvent action of the gastric juice. The process of preparation is so simple that any one may give it a trial, and if it proves all that Dr. Long claims for it, it should bring pepsine, heretofore a costly as well as a valuable remedy, within the means of ordinary patients.

Chlorodyne.—Among the many formulæ that have been published under this name, we select the following, as affording at once an elegant and a reliable preparation:

℞. Morphiæ Sulphatis	gr. iv.
Extracti cannabis indicæ	gr. viij.
Chloroformi	fʒj.
Olei menthæ piperitæ	gtt v.
Olei capsici	gttj.
Acidi Hydrocyanici, dil	gtt xij.
Alcohol	aa f℥ss.
Glycerini	

M. et ft. sol. Dose 10 to 25 drops.

This may be diluted for administration to any desired extent, either with pure glycerine, or with equal parts of glycerine, alcohol and simple syrup.

Laxative Pills.—An excellent combination in cases of habitual constipation is the following:

℞. Podophyllin	gr. xii.
Aloes, pur	gr. vi.
Pulv. ipecacuanhæ	gr. vi.
Gelsemin	gr. vi.
Strychinæ	gr. i.
Ext. stramonii	gr. xii.

M. et ft. mass. div. in pilulæ No. XL. Dose 1 or 2 a day.

Quinine Pills.—Of the various excipients in use among pharmacists for quinine pills, few give an entirely satisfactory result. Acacia or tragacanth, added in the form of powder, yields a mass easily managed, but liable to become hard and insoluble with age. Starch paste is recommended on high authority, but is probably open to the same objection. Sulphuric acid makes a very compact pill, which is superior, also, on account of its ready solubility. Rapid manipulation, however, is necessary in the use of this excipient, as the mass speedily sets, becoming of a flinty hardness. Where the number of pills to be made up is large, this becomes a source of serious embarrassment to the operator, and the acid is moreover frequently inadmissible, when other ingredients are to be combined with the quinine. Citric acid may be substituted for the sulphuric, but is, perhaps, in no respect superior to it. The crystallized acid is ground with the quinine to an impalpable powder, and then moistened with the smallest possible quantity of water, to make a pilular mass. Plasma — made by mixing 60 or 80 grains of starch with an ounce of glycerine, and heating to about 220° F.—forms an admirable excipient, and the pills always remain soft and readily soluble. Recently our attention has been called to the use of simple glycerine, which we find to answer every requirement. The quinine must first be ground well in a mortar, to break up its crystalline structure, and it may then be formed into a pill mass with the greatest facility. The pills are compact and equal in all respects to those made with the plasma.

Editorial.

It is with pleasure that we again seat ourselves in the editorial chair, after a six months' vacation, wherein we assumed the position of an outsider, and critically scanned the Review. We now enter upon our duties with more earnestness than ever, and hope, by watchfulness and care, to merit our share of support from the profession, with and for whom we labor, and whose elevation to the grand position to which it aspires we, in common with our co-workers, are zealously striving to protect. The senior editor of the retiring staff now feels compelled to resign this our literary bantling, at whose birth he assisted, and whose growth and dentition he has watched with paternal solicitude. The increasing cares of business make it necessary for him to leave us; but in dropping the editorial quill, he, with his colleague, tenders us a hearty "God speed."

WOMEN AND MEN.

In the medical world, as well as at the polls, women are creating a sensation, and, as ever, history repeats itself, so we find extravagance leading the train of reform. The leaders of innovations of all kinds are apt to be fanatics — persons whose whole souls are possessed by one idea, which is dwelt upon, like an image in a dream, until, by the very intensity of its consideration, it expands and fills the whole scope of vision — an unreal, monstrous figment of the imagination — distorting in its mist all the realities of life. Finally, as in the awaking from a dream, the transformed objects around resume their original proportions, so out of the haze of enthusiasm we emerge into the sober every day light of common sense, but, unlike the dream, we find that real advance has been made — society has stepped onward, and new truths have been recognized.

The question of women's rights will have its day, hot partizans, of both sexes, taking up the cudgel to contend for equal rights for the sexes, and equally bitter opponents denying these rights. As in the old story of a shield with a red and a blue side, the combatants are both right and both wrong. With the heartiest earnestness we grant woman equal powers and capacities with man, and acknowledge that she should have equal rights, but we cannot allow her abilities or her sphere of labor to be identical with his. Equality is not identity. The rose and the camelia are equally beautiful, but their beauty is not the same; the japonica, in its stately magnificence of color and form, is glorious, but the rose, in its velvety softness of tint and texture, and divine fragrance, is not a whit the less esteemed. So with man and woman, each divinely fitted to fill a part in the economy of life, but with diverse, though equally important and noble fields. Nature will rebel against any innovation upon her laws, and any experiment of that kind always has and always will be a failure.

Our views of the question being thus propounded, the medical aspect of the case may be considered, and here there is room for fair discussion. Our own view of the matter is, that women are not fitted for the general practice of medicine — a view founded upon our appreciation of their organization. In the first place, the majority of women are called upon to fulfill the functions of maternity, which the incarnation of the Redeemer has sanctified above all other duties, ennobling and glorifying it, so that for four thousand years the sterile woman deemed herself cursed in being cut off from the possibility of bringing forth the anticipated Messiah; and the part woman bore in that event will cast its hallowing light over the pains and blessedness of motherhood, until the probationary period of the human race is passed, and "marrying and giving in marriage" shall be known no more. It is patent to every unbiased thinker that a wife and mother has little opportunity for the duties of active professional life. The class of women who have to provide for themselves is the one which the question chiefly reaches, and we believe that, in the vast majority of cases, experience will prove that women will not attain eminence in any of the learned professions. There will be a few brilliant exceptions, as in the past Madame LaChapelle and Madame Boivin, and in the present day scarcely a greater number. This paucity of result is to us the strongest argument against the probable success of women, as a rule, in professional life. Female physicians have been comparatively numerous for several years, but we do not find a proportionate number ranking as lights in scientific research or professional notoriety. Nevertheless, the best settlement of the question will be the proof of experience, and the ladies have at present ample opportunity to offer that proof.

We cannot too strongly express our contempt for the outrage which certain medical students and one professor, in one of our Eastern schools, put upon a class of ladies in the amphitheater of a hospital, to which they had been admitted by the directors of the institution. We heard the account of the scene direct from a member of the class, and we felt humiliated and ashamed for the sex, as the disgraceful details were related. We do not believe that the ladies were in their proper place, but that in no degree excused the male students for violating their claim to the title of gentlemen — a title which they will find it needful to merit ere they can be ranked among the true disciples of the gentle Hippocrates.

THE CASE OF DR. PAUL SCHŒPPE, OF CARLISLE, PA.

THE case of Dr. Paul Schœppe, accused of poisoning Miss Maria Steinnecke, a patient of his, and convicted of that crime on meagre circumstantial evidence and the insufficient testimony of experts, has attracted the attention of the profession throughout the country.

It appears to be the unanimous opinion of medical men and of toxicologists that the evidence on which Dr. Schœppe was convicted was not only inconclusive but was absolutely irrelevant and nugatory. The facts of the case as developed at the trial are these:

The deceased, a maiden lady 65 years of age, a woman of full habit, and a frequent sufferer from vertigo, was taken sick on the 27th of January, 1869. An active emetic was administered, which produced its legitimate result, but a few hours later the patient sunk gradually into a comatose condition; paralysis of the right side of the face, and probably, also, the right side of the whole body, supervened, with contraction of the pupils. The patient remained in this condition till her death, which occurred about thirty-four hours after the appearance of the first symptoms. At the autopsy, which was not made till nearly a fortnight afterwards, no careful examination of the condition of the kidneys or the heart was made, neither was there care taken to trace the cerebral arteries in search of obstructions, which might have led to death from partial anæmia of the brain, with indications very similar to those actually presented in this case.

The symptoms which we have briefly enumerated point evidently to apoplexy or softening of the brain. The partial paralysis, even if it affected only the facial nerves, should exclude the idea of poisoning. Moreover the chemist who examined the contents of the stomach found no traces of any narcotic poison. His method of procedure for the detection of prussic acid is pronounced by eminent toxicologists so faulty that "it would give evidence of that poison in any ordinary healthy stomach." Slight traces only of the acid were detected, and the chemist was unable to preserve the evidences he obtained of its presence, or, at least, he failed to exhibit such evidences in court. The symptoms obviously were not those of poisoning by hydrocyanic acid, and the whole testimony relating to the detection of poison in the stomach was of so unsatisfactory a nature that the judge, in his charge to the jury, recommended them to "reject the idea of poisoning by prussic acid."

At a meeting of the medical practitioners, chemists and jurists in Washington, the following resolutions were adopted almost unanimously:

Resolved, That the published statements of the trial of Dr. Paul Schœppe do not contain any evidence of a scientific character which goes to prove that Miss Steinnecke died of the effects of prussic acid, or, indeed, of any other poison.

Resolved, That so far as an imperfect examination of the body, made after a lapse of twelve days subsequent to death, will allow a conclusion to be drawn, and taking the history of the case into consideration, the aggregate of the evidence points to a natural death.

Resolved, That a committee of five be appointed to prepare a memorial, to which signatures of the meeting are authorized to be attached, and forward the same to the Governor of Pennsylvania, requesting executive clemency in this case.

The memorial was drawn up and presented to Gov. Geary, and we believe that the execution of the sentence pronounced against Dr. Schœppe has been at least temporarily suspended.

NEW MEDICAL WORKS IN PRESS AND LATELY PUBLISHED.

LINDSAY & BLAKISTON.—A History and Present State of the Cell Doctrine, for the use of Students in Medicine; by James Tyson, M. D. Practical Anatomy, for the use of Students; by C. Nealt, M. D., F. R. C. S.; second edition, illustrated. Protoplasm, or Life Force and Matter; by Lionel S. Beale, M. D. Bell's Manual of the Operations of Surgery, second edition.

D. APPLETON & Co.—A Practical Treatise on the Diseases of Children; by Alfred Vogel, M. D., from the fourth German edition, 1869. Physiology of Man, Part III; by Austin Flint, jr. 1869.

J. B. LIPPINCOTT & Co.—Percussion and Auscultation, from the German; by Prof. S. C. Lane, M. D. Hypodermic Medication; by Prof. Roberts Bartholon, M. D.

HURD & HOUGHTON.—Contributions relating to the Surgery of the War; by Frank H. Hamilton, M. D; third of the Sanitary Commission's series of publications.

HENRY C. LEA.—Flint on the Heart, new edition.

PUBLICATIONS RECEIVED.

ALWAYS welcome, because always replete with scientific information, is the *American Journal of Science and Arts.* The contributions to Zoology, Chemistry, Astronomy and Physics, are the fruits of original investigations pursued by men whose names are a guaranty of the value of their labors. Each volume consists of six numbers, comprising a total of about 900 pages of valuable and interesting reading matter. The journal is published at New Haven, Conn., under the able conduct of Profs. B. Silliman and James D. Dana, and it should find its way to the office of every physician who pretends to keep pace with the advance of modern science.

THE *Chicago Medical Journal* comes to us in a new and attractive dress. By a division of labor which will no doubt prove advantageous to all parties, the publishing of the journal has been intrusted to Messrs. W. B. Keen & Cooke, while the literary labor of editing the magazine rests with the gentlemen who have already shown such excellent ability in its conduct.

GOOD HEALTH, a capital magazine for general circulation, presents in popular language many medical topics, aiming to promote the health of the people, by teaching them something of the laws of health and life. Its field is a good one, and its usefulness will be wide-spread if its conductors avoid presenting their subjects with too much technicality, a fault which we observe in one or two of the articles.

AMONG the many journals which adorn our table with non-professional reading, we observe *Every Saturday* coming out in a new dress, assuming the quarto form and presenting itself as a first class illustrated weekly. We have no doubt that the new style will be more popular, and from past experience we are assured that in literary merit it will not be deficient.

BIOGRAPHICAL SKETCH of the late A. B. Shipman, M. D., of Syracuse, N. Y. Read before the Onondaga County Medica Society, by H. O. Jewitt, M. D. Albany. 1869. Pp. 10, 8vo.

ANNUAL REPORT of the managers of the Massachusetts Charitable Eye and Ear Infirmary. Boston. 1869. Pp. 22, 8vo.

Appleton's Weekly, just closing its first year of existence, has gained an enviable reputation, and with its accompanying cartoons always receives a hearty welcome. In speaking of Messrs. Appleton, we offer thanks for the fine steel portrait, quarter life-size, of the late Dr. Francis, of New York, a very superior work of art, which is offered as a premium to subscribers for either of their medical journals.

Messrs. Harper keep up, to the full, the interest of the *Weekly* and *Bazar*, the latter of which the ladies seem to consider as almost of as much importance as their daily bread.

The various monthlies are forthcoming, with a very readable table of contents. *Harper's Monthly*, the *Atlantic Monthly* and *Putnam's* for January, are all promptly out. *The Young Folks* receives its meed of praise too widely, as the best of its class, to require comment at our hands. *Peterson's Magazine* for January contains, besides its usual contents, a large fashion plate, and offers to new subscribers a large steel plate engraving as a premium.

Last, though not least, come our agricultural friends. *The Cultivator and Country Gentleman*, published by Luther Tucker & Son, at Albany, one of the oldest and best agricultural journals in the country, promises for the year to come all and more than it has done in the past.

At home we do not overlook the *Western Rural*, which for nearly four years has been a constant and valued weekly visitor, or a new candidate for popularity, the *Michigan Farmer*, likewise a weekly, appearing in handsome type, on fine, smooth paper, and containing an attractive variety of reading matter.

The Agriculturist, published by Orange Judd & Co., of New York, with its increasing years seems to acquire increasing attractions.

James Vick, of Rochester, N. Y., sends us his catalogue of flower and garden seeds, beautifully illustrated, and containing, in addition to a marvelous number of varieties of flowers and vegetables, plain and clear directions for their culture.

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DETROIT
Review of Medicine and Pharmacy.

VOL. V. FEBRUARY, 1870. No. 2.

THE OLD VEGETABLE NEUROTICS OF DR. HARLEY.—PHYSIOLOGICAL AND THERAPEUTICAL RELATIONS OF SVAPNIA WITH CRUDE OPIUM AND MORPHIA.

By J. M. Bigelow, M. D., Professor of Botany, Detroit Medical College.

PART 1ST—PHYSIOLOGICAL.

A KNOWLEDGE of the effects, physiological, therapeutical and toxicological, of opium and its derivatives upon the human and animal systems, has advanced in ratio with its importance, as it assuredly is the most valuable remedy within the scope of the Materia Medica.

For other medicines we have substitutes, sometimes in great abundance, but for opium there is nothing that can take its place. The beneficial effects of this medicine are immediate, direct and obvious, and not like many other valuable and even specific remedies, remote, vague or contingent.

Dr. Hammond, in a late work on "Sleep and its Derangements," describes some interesting experiments performed on dogs, to show the effects of opium and sleep in producing changes in the appearance of the brain in a state of wakefulness, of sleep, and of complete narcotism.

For this purpose, the calvaria and membranes of three equally sized dogs were removed, under the influence of chloroform, so as to expose the brain to view, all being in a perfectly natural condition. After the effects of the chloroform had passed away, to the first a fourth of a grain, to the second one grain, and to the third two grains of opium were given.

"At first the circulation of the blood in the brain was rendered more active and the respiration became more hurried. The blood vessels, as seen through the openings in the skulls, were fuller and redder than before the opium was given, and the brain of each animal rose through the hole in the cranium.

"Very soon, however, the uniformity which prevailed in these respects was destroyed. In No. 1 the vessels remained moderately distended and florid for almost an hour, and then the brain slowly regained its ordinary appearance. In No. 2, the active congestion passed off in less than half an hour, and was succeeded by a condition of very decided shrinking, the surface of the brain having fallen below the surface of the skull and become pale. As these changes supervened the animal gradually sank into a sound sleep, from which it could easily be awakened. In No. 3 the surface of the brain became dark, almost black, from the circulation of blood containing a superabundance of carbon, and owing to diminished action of the heart and vessels. The surface of the brain sank below the level of the opening, showing, therefore, a diminished amount of blood in the tissue; at the same time, the number of respirations per minute fell from 26 to 14, and they were much weaker than before."

It is thus seen that a small dose of opium excites the activity of the mind, attributable to a fullness of blood in the brain. A large dose causes stupor by retarding respiration and allowing to accumulate and circulate in the blood vessels carbonaceous matters which are well known to act as a poison on the brain. A moderate dose produces sleep by an action on the nervous system that has not hitherto been explained, but the foregoing experiment proves that the amount of blood in the brain is lessened during its existence. It is, moreover, shown that the condition of the brain during sleep is very different from that which exists in a state of stupor or narcotism..

It is commonly believed that the peculiar effects of opium and other narcotics on the human system, are manifested indirectly through the instrumentality of the nerves; but if such is the fact, how are we to account for their effects upon the contractile tissues of certain vegetables? Dr. Headland, "Action of Medicines," p. 252, remarks:

"It is worth while to notice the curious fact that narcotic agents have been found to paralyze the irritable or contractile tissues of certain vegetables. Prof. Marcet, of Geneva, first noticed that the vapors of chloroform and other narcotics affected the sensitive plant so as to prevent it from contracting at the touch, but without, at the same time, perceptibly injuring the structure. I have produced the same effect on a species of acacia which naturally closes its leaves on the approach of night. The leaf experimented on remained open, while the others closed. After a certain time it recovered. Solutions of morphia and conia, and other sedatives, have been found to produce the same results."

In the invertebrated animals, opium causes weakness or paralysis of the contractile tissues, with gradual sinking and death. In animals endowed with a higher development of the nervous system, there is consequently an increased number of symptoms manifested. In reptiles, fishes and amphibials, in addition to the weakened and paralytical condition of the contractile tissues, convulsions are a common attendant. In birds and mammals, besides the paralysis and convulsions, stupor is an incidental symptom. In fishes, the convulsive contractions bend the body laterally; but with animals, the superior dorsal muscles are affected, by which the head and tail are elevated.

The most recent investigations on the separate and combined actions of the six active alkaloids of opium, both upon the human and animal systems, is by Dr. John Harley, of London, published the past year in a volume entitled, "The Old Vegetable Neurotics."

On account of the want of reliability in the strength and purity of many of the articles used by the older experimenters, he has sometimes repeated over again their experiments with chemicals obtained and proved with the utmost precaution, and has also instituted many new ones. These he has carefully and minutely watched and recorded with scrupulous circumspection.

On the horse, morphia has two opposite effects, according to the temperament of the animal. On those possessing a quiet, stubborn temperament, hypnotism may be produced; but this is much more easily effected when injected under the skin than when exhibited by the stomach. On the other hand, those with a nervous and excitable disposition may receive doses sufficient to produce death, with no hypnotic effect whatever resulting. In these cases the excitant and deliriant action being rapidly developed seems to prevent any manifestation of a hypnotic character.

The action of morphia upon the dog, Dr. Harley says, differs in no respect from that on man. In the dog, as in man, there are two classes of individuals, each of which is affected differently by the drug. In the one class, the hypnotic effects are readily and constantly produced, and if the dose be sufficient, profound narcotism results. If, however, the dose be larger than is necessary for the purpose, the narcotism gives place to delirium with stupor. In the other class, it is difficult, and in many cases altogether impossible, to induce sleep by any dose short of one sufficient to endanger life itself. In this class morphia produces the most distressing effects, viz: faintness, prolonged nausea and retching, with intervals of dreamy, delirious somnolency, rarely or never passing into sleep, which comes to the exhausted body when the protracted effects of the drug have passed off.

On the dog, in doses large or small, given under the subcutaneous areolar tissue, or by the stomach, morphia has the invariable effect of producing vomiting.

The mouse is very susceptible to the influence of morphia, and its effects are very regular and uniform. It consists essentially in forced exercise, associated with, and apparently dependent upon, a cramped condition of the spine. Hypnosis is altogether an after effect, and narcotism only occurs after a dangerous dose.

The following is a synopsis of Dr. Harley's conclusions of the effects of morphia upon animals: Cramp is the maximum effect of motor excitement, and yet, in the foregoing cases, it is associated with a condition of other muscles bordering on paralysis. Something, then, we must conclude, intervenes between the roots of the longer motor nerves and their ultimate ramifications, to prevent the uniform diffusion of the cramping impressions, which, originating in the excited centres of motion, are expended upon the spinal and thoracic muscles. That the obstruction is due to diminished conductivity of the nerve cords, still further appears from the fact that as the torpifying effects of the morphia pass off, the hinder parts of the body are for the first time affected with decided convulsive movements.

The nerves having recovered their conducting function, allow the currents to pass without hindrance, and those tetanizing impressions which throughout had been antagonizing and counteracting the hypnotic action, are now, when on the wane, free to pass and manifest themselves in slight convulsive movements.

The nervous systems of the horse and mouse show that physiologically, morphia is a compound substance, and that its constituents are tetanus and hypnosis—effects which in these animals are nearly counterbalanced, the preponderance being in favor of the former. But so slight is the advantage, that little more than active delirium and restlessness usually results. If the hypnotic action were much weaker, or altogether eliminated, as may perhaps occur in some animals, then, indeed, morphia would not differ in its action from thebaia or strychnia.

With man, as with animals, the effects of morphia may be divided into two opposite classes, depending upon the temperament or peculiar nervous idiosyncrasy of the subject. 1st. Those of a cold, phlegmatic temperament are easily brought under its hypnotic influence and suffer little or no discomfort from its stimulant action on the brain or its depressing effects on the nerves and functions of respiration. 2d. Those of a nervous and excitable constitution suffer from its deliriant or tetanic effects, or both, to such a degree that its hypnotic action is altogether counteracted until it has passed away.

The general features of the action of morphia on the brain are nearly the same in all animals of every variety of constitution, and are the result of two opposite effects—a hypnotic, which includes anæsthesia, and an excitant, which includes cramps and convulsions. In one class of temperaments these two effects upon the nervous economy are so nearly on a par as to equalize each other, so that in moderate doses the drug has only a tonic and stimulant action, and on an increase of the dose frequently gives rise to active delirium. In a second the hypnotic effect prevails, and the stimulant action appears to be confined to the heart. In the third class the excitant action counteracts, more or less, the hypnotic influence, and sleeplessness, with unrest or delirium, is the consequence.

Women are more liable to its excitant action than men, and amongst women, persons of a highly emotional, excitable and energetic disposition are those to whom opium in any form is a very distressing remedy, and, when hypodermically used, is a very dangerous one.

Those alarming symptoms which occasionally are the result of its introduction under the skin, the nausea, syncope and general distress which soon after ensue, and the fatal issue of prolonged narcotism, are all attributable to its influence on the spinal cord. Danger first follows from spasmodic cramps of the respiratory muscles; the motion of the chest is arrested; the patient gasps for breath; the heart on the right side becomes turgid, and the pulse rapidly sinks, and, unless either natural or artificial respiration is brought to the relief of the cardiac distress, the patient must soon succumb. Derangement of the pneumogastric nerve is the main source of the distress which ensues. During the action of an ordinary medicinal dose the respiratory movements are reduced one-fourth or one-third, and after a poisonous dose, they are still further reduced until they become imperceptible and ultimately cease altogether. Where the excitant action of the medicine on the spinal cord is undue, the heart is in a constant state of repression. When these effects upon the respiratory functions generally, and the pneumogastric in particular, are neutralized by other physiological or morbid effects, then the stimulant effects upon the sympathetic system are manifest, and the pulse is increased in rapidity, volume and force.

One other article, the Calabar bean, has the effect to produce contraction of the pupils, but it is curious to know that Dr. Harley, in his researches on the actions of this medicine, shows that it has no contracting influence on the pupils of the horse, any such tendency that may exist being overcome by a stimulant action upon the sympathetic nerve, commonly resulting in moderate dilatation. He also shows that the constituent of opium lately discovered—cryptopia—in large doses has a decided tendency to produce dilatation of the pupils in man.

The extravagant laudations of the anodyne and hypnotic properties of narceia by many continental physiologists, have lately received quite a check from the researches of Dr. Harley, of London, and Dr. DaCosta, of Philadelphia. Dr. D., experimenting with this alkaloid in the Pennsylvania Hospital, arrives at quite opposite conclusions with regard to its effects from those of M. Bernard and others. Narceia, which is difficultly soluble, when combined with codeia is rendered much more so, and Dr. DaCosta is of the opinion that M. Behier's sample of the medicine was rendered impure with codeia, by which the difference in effects are accounted for. Dr. Harley observes: "Taken in doses of five grains and upwards, by the mouth, it appears to have no effect upon the human system. Under the skin, in doses of three-fourths to one grain, it produces a comfortable, tranquilizing effect, but insufficient to produce decided sleep." It is difficult to use hypodermically on account of its insolubility and the difficulty of obtaining it in a concentrated and unirritating form. Dr. H. thinks it is practically useless as a medicine.

Meconine has been known as a constituent alkaloid of opium for upwards of forty years, but until the publication of Dr. Harley's researches, little or nothing was known of its physiological or therapeutical properties. Its action on the system, by the mouth, is quite insignificant in doses of five grains, but injected under the skin it is simply tranquilizing and hypnotic, but much more decided than narceia. It is, also, much less irritating when exhibited hypodermically. Dr. Harley, to whom we are indebted for what we know of its effects, observes: "Much, therefore, of the laudation that has been bestowed upon narceia, may with more justice be transferred to meconine," which he believes will prove a really useful medicine. Under the skin, the maximum effect is reached by a dose of one, or, at most, two grains. Compared with opium, the hypnotic effect of meconine is so feeble that it cannot be expected to take the place of either the crude drug or morphia in cases which require but moderate doses of these to produce sleep. But in children, and in those who yield readily to a soporific influence, half a grain of meconine will generally, he believes, be found effectual. In the former class of persons, where convulsions impend, and in the latter, where morphia disagrees, it promises to be a valuable remedy, and the necessity of introducing it by the skin appears to be the only objection to its use.

The alkaloid cryptopia has been but lately brought to light by the researches of Messrs. T. and H. Smith, of Edinburgh, but Dr. Harley has already tried its effects upon the dog, the mouse, and man. The per centage of cryptopia in opium is exceedingly small. According to Dr. Harley its effects upon the dog are most remarkable. He is thrown into a phrenzy of delusion. Aroused from a state of quietude to one of intense and uncontrollable excitement, he soon begins to act as if he were attacked by a swarm of savage bees and unable to effect his escape. He stands at bay with legs rigidly set upon the ground, and every muscle strained to the utmost, and the tail strongly curved on the perineum; casting wild and anxious glances around him, he wheels from side to side, or darts forward a few paces, and then as quickly retreats, with the head upraised and violently jerked backwards. These actions are accompanied by loud and rapid panting; the tongue is protruded and saliva drops from the mouth. In eight cases Dr. Harley used it hypodermically in doses of from one-half to one and one-quarter grains, having decided hypnotic effects. In the case where one and one-quarter grains were administered, the pupils were dilated from 1/8″ to 1/7″.

The general conclusion arrived at was, that this alkaloid, like morphia, has two distinct effects—a hypnotic and an excitant of a most remarkable and exceptional kind, dependent partly upon an illusion of vision and partly upon a tendency to convulsive action.

With regard to its therapeutical value, Dr. Harley observes: "Further acquaintance with it will, perhaps, more positively indicate that, as happens in morphia, individuals are affected in opposite ways by it, some being influenced entirely by its excitant action, while others are as exclusively affected by its hypnotic effects. Until this shall have been more clearly determined we must be careful, he thinks, to avoid the use of cryptopia in those persons who are unpleasantly affected by morphia. Its action upon the respiratory function is first stimulant but subsequently depressant, and death is the direct consequence of this depressant effect."

Almost as much confusion exists with regard to the action of codeia as with that of narceia. From the experimental researches of Dr. Harley it appears that the action of codeia on man closely resembles that of morphia, and if carried greatly to excess would probably end in tetanic convulsions like thebaia in animals. Like morphia, it possesses both hypnotic and excitant properties. Those susceptible to the hypnotic influence of opium are subjected to somnolency when exhibited by the areolar tissue in doses of one or two grains. The excitant properties of the drug are manifested by its stimulant action upon the heart and motor centers, causing acceleration of the pulse, contraction of the pupils, and derangement of the vagus. Two grains, by the skin, in those who are easily influenced by a soporific, are about equivalent to one-fourth of a grain of morphia. By the stomach, larger doses are required, but it is supposed that these may sometimes be objectionable, on account of the tendency to produce disturbance of the stomach and bowels.

The tetanic effects of the alkaloid thebaia have been long known. Dr. Harley did not experiment with this substance on the human subject. Its action is quite transient in comparison with that of the other constituents of opium.

The following is the physiological order in which Dr. Harley collocates the active alkaloids of opium:

Hypnotics.	1st. Morphia.	*Excitants.*	4th. Cryptopia.
	2d. Meconine.		5th. Codeia.
	3d. Narceia.		6th. Thebaia.

We propose to arrange them according to their peculiar potentiality, in the following order:

Hypnotics.

1st. Morphia—powerfully hypnotic; excitant action considerable, but secondary; contracts the pupils.

2d. Meconine—moderately hypnotic; excitant action observable only in comparative physiology.

3d. Narceia—feebly hypnotic; excitant action hypothetical.

Excitants.

4th. Codeia—hypnotic and excitant about equally; as an excitant, stronger than morphia and weaker than thebaia; as a hypnotic, stronger than thebaia and weaker than morphia; contracts the pupils.

5th. Cryptopia—excitant power decidedly pronounced; hypnotic action so feeble as only to be recognized in comparative physiology; dilates the pupils.

6th. Thebaia—excitant in the highest degree; hypnotic effects so slight, even in the animal system, as to be almost hypothetical.

SVAPNIA *is not a simple principle*, BUT A PREPARATION OF OPIUM, in which those constituents that are soluble only in benzole, alcohol, ether or chloroform, are entirely rejected. Hence, morphia, narceia, meconine and codeia, forming native salts with the peculiar constituent meconic and thebolactic acids of opium soluble in neutral menstrua, by which decomposition is retarded, if not entirely prevented, are united in this preparation.

It would seem, to an unprejudiced mind, that the great benefits derived from chemistry in the analysis of the elements of opium consists more in the facility with which we are enabled to determine their exact effects, both alone and combined, than in the use to which those alkaloids (excepting morphia), in their separate states, can be applied.

When we have thus determined the relative value of each, we are then enabled to select those that are valuable and reject those known to be deleterious or inert. And this is what we claim and all that we claim for svapnia. It can be relied upon and given in all cases where opium or morphia is indicated or can be borne, with effects equally good in every respect; and in addition, there will be found in the practice of almost every physician cases occurring almost every day in which idiosyncrasy debars us from the use of opium and morphia, where svapnia can be exhibited with the happiest results.

Possessing most, or all, of the anodyne constituents, and leaving out the excitant and convulsive elements, it more nearly resembles opium than morphia, especially in its tranquilizing and soothing effects.

Dr. Periera says, that in all cases where both opium and the morphia salts are equally admissible he much prefers the former. The experiments of Dr. Harley on the effects of these alkaloids, both alone and in combination, upon the animal economy, are very instructive in developing the different kinds and degrees of their action, thus showing that one constituent modifies the other, either therapeutically, as a medicine, or toxicologically, as a poison. He observes that, physiologically speaking, narceia and meconine may be considered as insoluble forms of morphia.

These substances, in their isolated state, are quite insoluble, but united with codeia and meconic and thebolactic acids they are rendered so soluble as to possess considerable anodyne power, and in this form they exhibit their properties in union with the other soluble constituents of opium. Morphia itself, when in a perfectly pure state, is not nearly so available, on account of its insolubility, and hence it is always combined with sulphuric hydrochloric, or acetic acids to render it soluble. On the one hand those active stimulant elements—cryptopia and thebaia—holding their place in crude opium give it a tendency often to produce tetanus, rigidity of the muscles, cramp, panting and difficult respiration, convulsions, accumulation of black blood in the lungs and right heart, and other untoward symptoms of undue narcosis in nearly all subjects of nervous temperaments. On the other, one of the most distressing effects upon the system of similar temperaments, and hence on those who can not well tolerate morphia, are the giddiness, syncope, delirium, violent retching and vomiting, which so frequently attend its exhibition, even in inconsiderable doses under the skin. In these cases the hypodermic use of morphia, even in small doses, is highly dangerous, of which there are already a considerable number on record; but when the morphia is combined with the modifying constituents of narceia, codeia and meconine (without being decomposed by active reagents), as is the case in the preparation of svapnia, and at the same time eliminated of those elements, such as cryptopia and thebaia, by means, also, which do not produce violent reactions on the other therapeutical constituents. It may be given both by the stomach and under the skin without the danger and distress that accompanies the exhibition of morphia alone or of crude opium.

ON THE CAUSES OF THE EXCESSIVE MORTALITY IN THE FRENCH ARMY.

By M. Ed. Laboulaye. Translated for the Review by A. B. Lyons, M. D., Professor of Analytical Chemistry in the Detroit Medical College.

THE mass of statistics which Dr. Chenu has embodied in his "Report on the Crimean Campaign," published some years since, and in the "Report on the Italian Campaign," which has recently been given to the public, throws a flood of light upon the sanitary condition and management of French camps, barracks, and military hospitals. The revelations which M. Chenu has had the courage to make are not flattering to our national pride. If it is true that the French soldier has not his equal on the field of battle, it does not follow that the commissariat of our army is managed in such a manner as to excite the envy of rival nations. Neither in peace nor in war is the French soldier cared for with that solicitude which he has a right to expect. He fares worse than either the English or the American soldier.

In time of peace, the rations prescribed by our regulations are insufficient; an addition of forty or fifty grammes of meat (nearly two ounces avoirdupois) would not more than satisfy the demands of a healthy stomach, in a young and vigorous subject. And not only are the rations scanty in amount; they are lacking, also, in variety. Magendie showed, long since, that when the same diet is long adhered to without change, the health suffers. In the navy provisions are supplied more bountifully and in greater variety. Cheese, sourkrout, smoked or salt fish, beans, peas and lentils are among the articles which form part of the allowance. The vigor of our seamen depends, indeed, upon various causes, but their generous diet is not to be overlooked as one of these, and the lesson is one by which our army might profit.

Another condition of health is cleanliness of person. I do not say that this is neglected in the French army, but it is not enforced by military regulations. Our soldiers are supplied with water to wash face and hands, but not with towels, and so, in spite of all rules, they use their bed covers, their body linen, or their handkerchiefs. The Romans never built barracks without establishing in them warm baths; our soldiers have never heard of such a thing; they have not been accustomed to bathe even their feet. What must be the atmosphere of the chambers where these poor fellows sleep? What constitution so robust as to resist its infectious poison? The quarters, also, are often too limited to afford the requisite amount of air for respiration. What wonder, then, that phthisis and typhus fever make havoc among our young soldiers? Nature exacts the penalty of her laws, however we may set them at defiance. While the French population, taken *en masse*, young and old, loses annually but five per cent of its members, the army, consisting of robust men in the prime of life, loses not less than ten per cent.

If the mortality is so great in time of peace, what must it be during a campaign? Let the record of the Crimean expedition answer. We lost 95,615 men; how many of these perished on the field of battle? 10,240; we may estimate at about the same figure those who died subsequently of their wounds. We shall have a total of only 20,500 to set off against a loss by disease of 75,000. The statistics of the campaign show an annual mortality by the common accidents of war of 34 men out of every 1,000; the deaths by disease amounted to 121. In the English army, subjected to the same conditions, but suffering much more severely than ourselves the first year by disease, the average annual mortality in the hospitals was, from traumatic causes, 23 per 1,000, from sickness 93. In the winter of 1856–57, when hostilities had ceased, and while we had but 323 men disabled by wounds, there were under treatment in the French hospitals 12,872 scorbutic patients, of whom 964 died; and 19,303 cases of typhus fever, of which 10,278 were fatal. At the same time, the English with a force of about one-third of ours, had but 209 cases of scurvy and 31 of typhus, and lost in all only 17 men. What is the secret of this enormous disparity? Our countrymen, of temperate habits, hardy, and accustomed to privations, have greater powers of endurance than the English soldiers. What, then, is the explanation of this terrible mortality? It is that scurvy is an alteration, an impoverishment of the blood, which results from bad nutrition and from destitution. It is that the poison of typhus fever is, if not engendered, at least fostered and propagated by the unwholesome atmosphere of crowded and ill ventilated barracks. With proper precautions and care, these terrible epidemics might have been warded off, or, at least cut short, and France might have been spared the loss of many of her bravest sons.

Well, it may be said, the army is at least supplied with surgeons. True, and they are men holding the first rank in the profession, and faithful to the trust committed to them. The names of Scrive and of Baudens will bear comparison with those of the most eminent military surgeons in England or America. M. Larrey, surgeon-in-chief of the army in Italy, is not an unworthy successor of his illustrious father. As to fidelity, it is enough to state that in the Crimean war, while the English lost not a single physician, the French, out of a total of 450, lost 82—a mortality more than twice as great, proportionally, as that among the rank and file of the French army. The heroic devotion of these men to their professional duty—to their feeling of humanity let us rather say—needs no comment.

But the number of our surgeons is deplorably insufficient. In the Crimea, with a force not more than a third as great as our own, the English had as many surgeons as we. Among the English and Americans, it is held that a physician in a hospital should not have more than one hundred patients under his care at one time; at Constantinople, ours had to attend each on an average three hundred, and nearly all of these seriously ill. Such an overstraining of the physical and vital energies is more than can be endured by most men. When the troops are in active service it is worse yet. The war had scarcely commenced in Italy, when the lack of a sufficient force of surgeons became apparent everywhere. At Magenta each of the surgeons in charge of the wounded had not less than 175 cases to attend; at Solferino 500. In the last instance, if we allowed the surgeon twenty hours to make his rounds, he would be able to give but three minutes to each of the wounded men. Is it strange, then, that many of the unfortunate sufferers perished for want of the necessary care? In the late war in Germany, Prussia, anxious to husband the strength of her army, sent out with it 1,953 medical men. In 1868, the whole number of physicians and surgeons whose services our nation had at command, was only 1,053. Let a great war arise and what could we do?

A more serious defect in our present system is the want of authority on the part of our military physicians. The great service M. Chenu has done us has been to exhibit, in its true character, a system which, as a nation, we have not hitherto understood, and which we must change, cost what it may. We have supposed that a military surgeon was a person of some importance—an officer in the army; we imagined that, responsible for the lives of our soldiers, he was in charge of the *ambulances*, and was master in the hospital. We had little acquaintance with the French system of administration and its spirit of centralization. The physician is all powerful at the bedside of his patient. He can bleed, or purge, or cut as much as he deems proper; beyond that, whatever be his nominal rank, he has no power. He is but an agent of the administration, and a subordinate agent. The man who has control of the field hospital, and picks up the wounded, who determines the situation and the plan of the hospital, who attends to the distribution of provisions and of medical supplies; who decides, in the last appeal, every question concerning hygienic measures, is not the physician who has made these questions the special study of a lifetime, but the *intendant*, (quartermaster) who knows nothing at all about them. By this arrangement is secured at least a harmonious working of the commissary system. Two ideas which are good within certain limits, have been pushed to the extreme, and so have given rise to this lamentable mistake. The one is the idea of economy, the other that of centralization. By placing in the hands of the intendant the entire control of the commissary and hospital department, remarkable advantages have been secured. In no other country are these departments managed with such honesty and such economy. The French army is maintained at less expense, in proportion to the number of men employed, than either the English or American. But has not this economy been carried too far? We recall to mind the wise maxim of the Marshal of Belle Isle, that "all parsimony in war is murder." To husband the resources of the nation is a laudable object; but is it not much more important to economize the lives of its soldiers? Is not this, indeed, a duty which should stand before every other? A farmer who would risk the lives of his horses and cattle to save a little hay and fodder, would be accounted a mad man. Is it more reasonable for us, comparing our hospitals with those of the English in the Crimea, to congratulate ourselves on the saving of a few francs per day in the wages of our employes, while we were losing 26 per cent of our wounded, against 13 per cent among the English?

But if false notions of economy have led us astray, the passion for centralization has been still more damaging to us. Certainly, if unity is important anywhere it is in war. Not only the success, but the safety, of the army depends upon perfect unanimity and harmony on the part of its commanding officers. A single will, everywhere present, should direct the whole body. It is well known how the French army is organized in time of war. At its head is the general-in-chief, who provides for every emergency, who plans the campaign and directs every movement of troops. Next in authority at the general headquarters, are the chief officers of the infantry, the cavalry, the artillery, and the corps of engineers. These constitute, in technical language, the command (*commandement*). Their duty is to employ the forces at their disposition to the best advantage in carrying on the strictly military operations of the war. Meanwhile the army must be fed and clothed, transported from one point to another, provided with shelter and forage. On the battle-field, too, the wounded must be borne out of danger and cared for, so as to be again able, as soon as possible, to serve their country. If an epidemic breaks out, hospitals must be provided for the sick. A strict account, finally, must be kept of all expenses, to guard against thefts and frauds. Thus, by the side of the army which fights the battles there must be a supplementary army composed of non-combatants, constituting what we call the commissariat. The administration of the divers departments of this service devolves upon one man—the intendant—of whom we have before spoken. Provisions, transports, money, *ambulances*,* hospitals, accounts, all are in his hands. Unaided and alone he manages everything, and he alone is responsible to the government.

On paper, this system has the merit, at least, of perfect simplicity; but in practice it is not only defective; it is dangerous. The ubiquity requisite to fulfill the duties of such an office as that of intendant cannot be created for the occasion. Practically, the system results in the neglect of the soldier. All sanitary measures are cramped and embarrassed. Theoretically, the intendant is director of the *ambulances*, and of the hospitals, but how can he watch over twenty *ambulances*, or, as we have seen at Milan, twenty-five hospitals at once? And what provision is made for supplying his place in his absence? Absolutely none. In the hospital there are three independent officers, the physician, the apothecary and the agent, none of whom has any authority over the others.

It is easy to see that endless confusion must result from such a state of affairs. But the greatest evil of the system is the impossibility of putting into execution the many sanitary reforms which every physician in charge of a hospital knows to be necessary to the welfare of the inmates.

What is the remedy? It is clearly enough indicated by the experience of the past. Let the cruel lessons of the late war suffice to impress it upon us. Since the subordinate condition, and lack of authority upon the part of physicians employed in the army has prevented them from averting those terrible scourges which are nature's vindication of her sacred laws, we must endow the physician with authority proportioned to the important office he fills. We must create a medical department, independent of the commissariat, and represented likewise at the general headquarters.

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*We have preserved, for convenience, the French word *ambulance*, although it might, perhaps, be better translated field-hospital.

A CASE OF CONGENITAL INTERNAL HYDROCEPHALUS.

Reported for the Review by Dr. M. C. Sculley, Vernon, Mich.

MRS. H., who resides two or three miles from this village, and who was in labor with her fourth child, was taken with proper labor pains early in the morning of the 5th of January, 1870, which pains continued, without much interruption, during the day. I was called to her assistance at 5 o'clock P. M.; and on a vaginal examination found, through a partially dilated os uteri and during a pain, a smooth and somewhat dense tumor presenting at the superior strait, but during the interval of pains it was soft and receding, which made the diagnosis as to presentation quite difficult. The sounds of the fœtal heart were heard at about two inches to the left and a little below the umbilicus. The pains occurred regularly once in three or four minutes, but were short and apparently inefficient to accomplish very much. At 10 o'clock another examination was made, at which time it was found that the os was completely dilated, and the tumor a little further advanced in the superior strait. It was ascertained at this examination that it was a vertex presentation, but the occipital relation was not satisfactorily made out at that time. At 12 o'clock another examination was made, which revealed nothing except a very imperfect union of the sagittal and lambdoidal sutures, they being considerably separated, and the interval between them affording to the touch a soft and yielding sensation.

It was now thought to be a hydrocephalic fœtus, but of moderate size. A little of the infusion of ergot was then administered to strengthen the pains, which had somewhat abated. At 1 o'clock the pains were stronger and somewhat longer in duration; but, upon another examination, it was found that no further advancement was being made, and at 2 o'clock the forceps were applied, with some difficulty, and, with aid of two or three pains, a dead child was delivered, which presented the following peculiarities, viz: the body was well formed in every respect, and of full size, but the head was enormously distended with water, measuring from above the ears around the superciliary ridges and external occipital protuberance, 21¾ inches. The head was nearly nine inches in its antero-posterior diameter, and its parietal diameter was a little more than five inches. The presentation was occipito-anterior right, or as near that variety as could be under the circumstances; and, bringing the occiput through the external parts of the mother first, rendered the delivery comparatively easy with the forceps, owing to the posterior elongation of the head. Had the occipital relation been posterior, the delivery would have been impossible short of perforation and evacuation of cranium.

DETROIT ACADEMY OF MEDICINE.

DETROIT, November 23, 1869.

The President, Dr. Inglis, occupied the chair.

Dr. Lyons acted as Secretary.

Prof. Armor, of the Long Island Medical College, read an interesting paper on the use of the *solanaceæ*, a family of so-called narcotics, in the treatment of *atonic constipation of the bowels.* He claimed that belladonna is peculiar and unique in its action on the nerves and muscles of the abdominal viscera, and he called attention to the experimental observations of Dr. Harley, in his published Gulstonian lectures, clearly demonstrating the effects of belladonna in everywhere relaxing the circular muscular fibres of all the hollow viscera, while at the same time it tones and tightens the longitudinal fibres of the muscles of organic life.

Trousseau, many years since, pointed out the peculiar virtues of belladonna in obstinate constipation, and more recently Niemeyer praises its virtues; but neither of them pretend to designate the peculiar class of cases to which it is applicable.

Dr. Armor claims, from a good deal of careful clinical observation, that it is peculiarly applicable to nervous and hysterical constitutions—all cases, indeed, in which there is marked depression of the nerves of organic life; hence, admirably adapted to a large class of female diseases, in which atonic constipation is a prominent symptom.

In Harley's recent work on the "*Old Vegetable Neurotics*," there is much evidence tending to show the influence of belladonna as a direct stimulant to the nerves and muscles of organic life.

Dr. Armor stated his belief that stramonium is quite equal to belladonna, and for many reasons there is less objection to its protracted use.

He also stated that the true mode of using either belladonna or stramonium in constipation is by suppository. He is accustomed to using one-half or three-fourths ot a grain of good fresh extract, made into good large-sized rectal suppositories of cocoa butter, according to the U. S. Dispensatory. One should be used each night on going to bed, and their use should be continued for some time.

After natural and easy evacuations have been secured by the use of suppositories, it may be well to use small doses of nux vomica and aloes, *per orem*, for the purpose of increasing intestinal excretion, and adding to the general stimulant and tonic action of the belladonna on the muscles of organic life.

If cases are judiciously selected. and the above plan of treatment faithfully carried out, the author of the paper claimed that most satisfactory results would be attained.

A vote of thanks having been tendered to Prof. Armor, an animated discussion followed upon the subject of the paper.

Dr. Gilbert—I was once called in consultation to an instructive case of this character. It was a female otherwise in pretty good health, and one, too, whose habits were by no means indolent. She sought advice about a tumor in the abdomen, which she had for some time observed to be gradually increasing. On examination, it was found to have the characters of a fœcal tumor, occupying the situation of the descending and transverse colon. Under a course of mild laxatives and tonics the tumor speedily vanished.

Dr. McGraw—I have been in the habit of prescribing in these cases of atonic constipation, very small and frequently repeated doses of aloes, combined with belladonna and nux vomica. I have sometimes thought that the same effect might be produced without the aid of the aloes. I have often been in doubt in the cases so often met with of nervous, hysterical females with uterine difficulties, and bowels habitually constipated, whether the origin of the morbid conditions was to be sought in the nervous system, in the uterus, or in the digestive tract.

Dr. Noyes—In my experience these cases have often recovered with no other treatment than that directed to the symptom of constipation. The uterus is too often called upon to bear the blame that really belongs to deranged liver and torpid bowels.

Dr. Andrews—I have used both belladonna and stramonium in these cases, usually in combination with aloes or podophyllin. Belladonna, even in minute doses, is apt to produce unpleasant symptoms—dimness of vision and a sense of dryness or rawness in the fauces; hence I have been in the habit, recently, of substituting stramonium.

Dr. Armor—I have found belladonna, employed *alone*, to act most happily in females of a nervous and hysterical constitution. The form of the suppository is, I think, preferable for its exhibition because of the congestion generally present in the pelvic viscera. I am in the habit of prescribing a suppository containing from one-half to three-quarters of a grain of the extract. When taken at bed time it will generally secure a natural, easy evacuation in the morning.

Dr. Gilmartin—Will pregnancy contraindicate this use of belladonna? I have myself, in these cases, combined with the belladonna a small quantity of opium.

Dr. Armor—With regard to the antagonism of opium and belladonna, I incline to the view which has recently been advocated by Dr. Harley in his work on the old neurotics, viz: that belladonna, as a powerful stimulant to the organic nervous system, is capable of obviating the depressing effects produced secondarily by opium. In this way belladonna may, to some extent, antagonize the toxic action of opium. A small quantity of belladonna will enable many patients to tolerate opium, when, without this addition, the secondary effects of the opiate would be so disagreeable as to forbid its use.

Dr. Lyster—I have found atropine to alleviate some of the symptoms in opium poisoning. I do not know, however, that it has been found adequate to avert death.

The exhibition of pathological specimens was now called for.

Dr. Webber—A case of intra-capsular fracture has been under my care recently at St. Mary's Hospital. The case having terminated unfavorably, a *post-mortem* examination was made, and a portion of femur, which I here exhibit, was removed. The patient was a German, 55 years of age, who had been for some time partially paralyzed in the lower extremities. The injury was caused by a fall upon the pavement. When the patient was brought to the hospital he presented unmistakable signs of intra-capsular fracture of the femur. I applied extension at first, but was obliged to discontinue it on account of the pain it produced. Extensive suppuration occurred, under which the patient sank, and finally died from exhaustion. From the specimen exhibited, it is plainly to be seen that no reparative process was set up, nor, indeed, could it have been expected. The question of greatest interest suggested to me by this case is the propriety of applying extension in fractures of this kind.

Dr. Noyes—Extension, it seems to me, does no good.

Dr. McGraw—I concur in the same opinion, for I believe that there are no authentic cases on record of bony union in intra-capsular fracture of the femur. This case reminds me of one that I myself met with not long since. The patient was a man 55 years of age, who had suffered for some time from partial paralysis of the lower extremities. He was barely able to hobble about with assistance. Suddenly he found one of his limbs wholly useless, and although, owing to paralysis of sensation, he suffered no pain, it was found, on examination, that a fracture had taken place. One physician pronounced it fracture of the acetabulum, but the signs were precisely those of intra-capsular fracture of the femur, and I saw no reason to believe that it was anything less usual. In the treatment, no attempt was made to secure union. Very little inflammation followed the injury, and in a few weeks the patient was able to get about again, nearly as well, apparently, as he was before the accident. The point of greatest interest in these cases seems to be the predisposition to fracture resulting from deficient innervation in the part.

Dr. Lyster—It is surprising that the patient should recover so quickly from so serious an injury.

Dr. McGraw—I recall another case, a lady sixty years of age, who was able to walk on crutches in even less time than the man to whom I have referred. The bone is so weakened and wasted that severe inflammation is not apt to follow a fracture.

Dr. Lyster—The view formerly entertained was that this brittleness of the bones in aged persons was due to the excess of earthy matter in their composition. It is now understood, from microscopical examination, that a species of fatty degeneration takes place in the bone. Any genuine case implying union, even of a ligamentous nature, must require not less than eight weeks. Union does not, however, always take place, even in cases where patients recover a degree of use of the limb.

The President then introduced Dr. Robbins, from Hubbardston, in this State.

Dr. Robbins—I have a case now on hand, with regard to which I would like to hear an expression of opinion. It is a case of stricture very near the orifice of the urethra. The opening is so small that it will not admit even a common sized probe.

Dr. McGraw—I should think that the case was one in which operation by direct incision would be admissible.

Dr. Armor—Dilatation, by means of slippery elm bougies, might be advisable if they could be introduced.

EXHIBITION OF INSTRUMENTS.

Dr. Lyster—I wish to present to your attention a bivalve speculum of novel construction, called the "Boston speculum." It is provided with a slit to permit the more ready introduction of the uterine sound, and can be converted into a Sims speculum by separating and reversing the blades.

VERBAL COMMUNICATIONS.

Dr. McGraw—I wish to say a word with regard to the use of belladonna in rendering labors easy. In one case in which I have given five drops of the fluid extract three times a day for some days previous to confinement, it has seemed to produce a decided effect. The action may perhaps be similar to that alleged to be exerted in the bowels, producing relaxation of the circular muscular fibres.

Dr. Gilbert—Can opiates ever be said to have a parturifacient action?

Dr. Armor—They are certainly of use in the early stage of labor, when the patient becomes worn out by ineffective pains.

DECEMBER 7, 1869.

Dr. Inglis, the President, occupied the chair.

Dr. Noyes—I have devised an improved forceps, which I wish to exhibit. Having a case, recently, in which it was necessary to seize and hold the iris firmly, I devised this instrument with serrated edges. By comparing the old instrument with mine, the advantage of the improved edges will be readily seen. Here is also an instrument devised by Liebreich for a similar purpose. I was not aware of the existence of Liebreich's instrument at the time when my operation was made. It answers the purpose designed equally well, though it will be perceived that its construction is quite different.

I also exhibit an ophthalmoscope made by Mr. Kuhlman, of this city, in imitation of Liebreich's German ophthalmoscope.

Dr. Jenks—I wish to call attention to Smith's artificial leech. To use the instrument, the operator first makes an incision with a scarificator. A small quantity of ether is then poured into a test tube, heated by immersion in hot water, and then the tube, filled in this way with the vapor of ether, is applied over the wound. When the ether condenses a vacuum is formed, and the blood is drawn into the tube. This instrument is adapted to the same purpose as the leech. I have used it upon the os uteri with gratifying results.

Dr. Noyes—This artificial leech of Smith's resembles a German instrument which I have now, in which the scarificator is a knife, turned rapidly by pulling a string. The blood is drawn by means of a tube and piston.

Dr. McGraw—It occurs to me that the heat of the hand might be sufficient to volatilize the ether. Perhaps Dr. Lyons can tell us at what temperature ether will become volatile.

Dr. Lyons—At about 97 degrees, I believe.

Dr. Webber—A case of scirrhus of the breast, possessing some interest, has been under my care recently, from which I have removed the diseased part. The tumor I here exhibit. The woman experienced difficulty with her breast at her first confinement, thirty years ago. At that time the nipple became ulcerated and fell off, and abscess followed from retention of milk. Since then she has always had trouble with her breast at each successive confinement, and there has always been a hard lump there, remaining the whole time since her first abscess. About a year ago a cow kicked her in the breast. This accident was followed by inflammation and the disappearance of the hard lump. Hardness, however, soon reappeared and gave evidence of being a cancerous growth. The diseased breast was removed and also the axillary glands on the affected side, which were found to be involved. This case indicates that cancer is frequently at its outset an entirely local disease and brought about by local lesions.

Dr. Lyster—With regard to the use of belladonna in opium poisoning, in continuation of the subject introduced at the last meeting, I wish to inquire what success the members have had with this mode of treatment.

Dr. Andrews—This treatment, in my experience, has not been very favorable. In a case of a woman who had taken a large quantity of opium, and whom I found in a comatose condition, I administered the fluid extract of belladonna, and although the pupils dilated promptly, no improvement took place in the dangerous symptoms. I found her in a low condition, with pupils contracted, pulse 120 and very feeble, and respiration one a minute. In connection with the belladonna stimulants were used. No improvement being perceived, a galvanic battery was used, and the patient rallied under its influence. She, however, died twelve hours after the application of the battery.

Dr. Bigelow—It is the opinion of Dr. Harley that in severe opium poisoning belladonna increases the bad effect. In cases, however, where the opium merely has a depressing effect, the patient is frequently benefited by the administration of atropia. Dr. Bartholow relates a case of opium poisoning cured by the subcutaneous injection of atropia in doses of $\frac{1}{66}$ of a grain.

Dr. Jenks—I once had a case of a child who took laudanum for paregoric, to whom I administered the fluid extract of belladonna in doses of three drops every hour. The pupils dilated and the child ultimately recovered.

Dr. Heaton—I have had no experience in the use of belladonna in opium poisoning, but have often used atropia and morphia in combination, and am inclined to believe the doctrine of Dr. Harley with regard to their opposite effects upon the ganglionic system.

Dr. Andrews—I have had, recently, a lady patient who suffered from nausea and headache, upon whom morphia acted unfavorably. I gave her morphia and belladonna together, with much better effect.

Dr. Inglis—One of the best means of rousing patients suffering from opium poisoning is to give them pain in some way. I once had a patient who was suffering from a very painful felon of the thumb. To relieve this pain she bought some morphia, and took, as her friends stated, "fifty cents' worth." When I visited her she was already in a sound sleep. I roused her, however, by irritating her thumb, and thus kept her awake until the effects of the morphia had passed away.

Dr. Webber—The cold douche to the head often does good service in cases of poisoning from opium, through the shock which it produces. I have known this to save patients apparently beyond other means of aid.

Dr. Lyster—I once had a case of this nature, a gentleman who had taken opium in large quantity, and to this patient I administered the tincture of belladonna in a dose of a teaspoonful every hour. Emetics were used freely, and he was compelled to walk up and down on the sidewalk in the open air, without his hat, until the effects of the opium had disappeared. Strong coffee was also exhibited to this case. In another case atropine was used subcutaneously until the pupil was largely dilated, but without averting death. For a stomach pump I used an œsophagus tube with an ordinary enema syringe. A large sized gum elastic catheter might take the place of the œsophagus tube for children.

DECEMBER 28, 1869.

At the request of the Vice-President Dr. Noyes occupied the chair.

Dr. Jenks—I have a specimen of *chloral* which I wish to exhibit, and also call attention to an article describing this medicine in the *Pacific Medical and Surgical Journal* for December, 1869.

Dr. Duffield—It should be borne in mind, with regard to chloral, that it is very subject to decomposition, and should not, therefore be used in prescriptions that are required to stand long.

Dr. Jenks—I have also to exhibit a *post-mortem* specimen of an ovarian tumor. The woman from whom the tumor was recently removed was 56 years of age, of frail constitution, and had long been troubled with indigestion, as well as many other symptoms indicating feebleness of constitution. Immediately previous to the operation she was in a feeble condition, and her life had been wholly despaired of by her friends. In this unfavorable condition she insisted upon the operation of extirpation, and would not consent to tapping or suffer any delay for prophylactic treatment. An incision of three inches long was made through the walls of the abdomen. The cyst was unilocular. No adhesions were found, and there was no serum in the peritoneal cavity. The peritoneum was in a condition of passive inflammation. The pedicle, which was extremely short and afforded no opportunity for clamping, was secured by means of a silk ligature passed through it. Both ends of the ligature were cut short and the pedicle dropped into the abdomen. The wound in the abdominal wall was closed with three deep silver sutures and three superficial silk ones. Soon after the operation tympanites appeared and rapidly increased. The flatus, as was ascertained by the *post-mortem* examination, was confined to the bowels. It was somewhat removed by introducing a long rubber tube and by enemata. No operation of the bowels, however, could be secured. Her sympathetic system was undoubtedly at fault. She died, finally, on the seventh day after the operation, with marked symptoms of septicæmia, as was especially indicated by prostration, delirium, and the characteristic sweetish odor of the breath. Injections of beef tea were administered to her repeatedly. Ecchymosed spots were noticed upon the cyst after its removal. The *post-mortem* examination revealed a considerable quantity of sero-purulent fluid. There were no adhesions. The inflammation appears to have been of a low, passive character. It would have been well if a prophylactic treatment could have been adopted. This would have consisted of the tincture of the chloride of iron, with quinine, and saline cathartics.

Dr. Duffield—How far is it well to yield to the wishes of the patient in proceeding to an operation?

Dr. Jenks—I would not feel justified in operating unless I saw *some* chance of recovery; but, inasmuch as death is certainly imminent without operation, the surgeon should give his patient the benefit of what little chance there may be. Regard for his own reputation should not prevent the surgeon from operating in such a case.

Dr. McGraw—I once became acquainted with the case of a woman who had so large an ovarian tumor that it interfered seriously with her breathing. She died on the operator's table, no doubt from shock. It would have been well, in this case, I am confident, to have tapped the patient some time before operating, and supported her with tonics. The shock would thus have been avoided. In this case the woman had insisted on the operation.

Dr. Lyster—I witnessed the operation of ovariotomy of which Dr. Jenks has spoken, and held the same opinion as that which has been expressed, with regard to the unfavorable age and general condition of the patient. The operation itself was, however, attended with no drawbacks. The disposal of the pedicle is an important question in such operations. Spencer Wells records thirty-seven cases in hospital practice, of which thirty recovered, in all of which the pedicle was clamped outside. Dr. Clay, of Birmingham, is accustomed to return the pedicle in all cases, allowing one end of the ligature, however, to appear externally. Dr. Nathan Smith of New Haven is believed by many to have been the first operator in this field. At all events he was unaware of any other operation of the kind at the time he operated. It appears to me that the difficulty of evacuating the bowels, which has been alluded to, might be often owing to the opium administered.

Dr. Jenks—I do not think that it has been so in my cases, since I have given opium for several days previous to operating in order that patients may become accustomed to its use.

Dr. Andrews—I attended, in company with Dr. Jenks, the case to which reference has been made. From the first the patient seemed to be suffering from shock. Although the bowels were full of gas, much of it could not be evacuated. There was no tenderness on pressure or any symptom of peritonitis, until the last day. Until then she could turn over readily in bed. On *post-mortem* examination the peritoneum was found to be injected, but there was no adhesive lymph.

Dr. Noyes—At the time of the operation I was impressed that it would not be a successful one. The patient was evidently not in a condition to secure a favorable result. Still, it seemed advisable to give the patient the little chance of recovery to health which an operation alone afforded. Where the pressure is great upon the abdominal blood vessels and nerves, its sudden removal may readily produce shock. This is undoubtedly an important consideration, and the evil should be obviated as far as possible by tapping before removal of the tumor, and by padding and bandaging afterwards. I think that the use of artificial serum in washing out the cavity is of questionable propriety in cases where no fluid has previously existed there.

Dr. Jenks—It is the opinion of Dr. Storer that the presence of a highly albuminous fluid in the abdominal cavity is injurious. A woman from Vermont recently consulted me with regard to ovariotomy, who had read up the subject and talked wisely about the views and methods of different operators. She was about 52 years old, in good health, and the abominal walls were thin. A hard tumor was felt above the pubes, which, when pressed, occasioned pain and nausea. Tapping, performed through the abdominal walls, entirely relieved her of all dangerous symptoms. The hard tumor proved to be the uterus crowded up by fluid.

Dr. Duffield—Has the use of iodine or of the iodides or bromides been found efficacious in retarding ovarian growths?

Dr. McGraw—I believe that the general opinion is that they are of no use.

Dr. Webber—Prof. Bedford has reported some favorable cases of this kind.

Dr. Jenks—I believe that, with regard to the cyst, they are of no use.

Dr. Bigelow—These tumors, from some cause, sometimes cease to grow. I remember the case of a woman who carried a large tumor, believed to be ovarian, for 15 years. She was the wife of a physician, and hence there would seem to have been little probability of an error of diagnosis.

Dr. Duffield—I once knew of a similar case, of 25 years' standing. The tumor was declared by many of the best physicians to be ovarian.

Dr. Jenks—Fibro-cystic tumors, attached to the uterus, are often mistaken for ovarian tumors. These may unquestionably be carried for many years.

Dr. Noyes—I was consulted some years ago by a woman in Maine, who had an enlargement of the abdomen. I told her that the tumor was either ovarian or fibro-cystic, but did not consider it a case for operation. I advised her to go to Boston to consult with surgeons there. In Boston she was told that she certainly had a tumor, but that an operation was not advisable. The subsequent history of the case proved that she had an ovarian tumor and also was pregnant, as she gave birth to a child a few months afterwards.

Dr. Duffield—A case has been brought to my attention recently, of death from the effects of tansy, taken to produce abortion. There is a popular belief that this article and some others will produce abortion with some degree of certainty. Now, I am of the opinion that this result can be brought about by this class of drugs only where there has existed some tendency to abortion previously.

Dr. Lyster—I am inclined to believe that where a popular impression of this kind exists, with regard to a drug, and has continued to exist for a long series of years, there is generally some good reason for it.

Dr. Noyes—The subject has been repeatedly discussed in courts of justice. I am of the opinion that tansy will not, as a specific, produce abortion, though this, as well as many other things, will often tend to bring about that result. I once knew of a woman who caused premature delivery by carrying wood across a cellar, while I have had a case in which dangerous quantities of tansy were taken without producing abortion.

Dr. Lathrop—A case once came to my knowledge in which a pregnant woman died from the effects of tansy, without aborting.

Dr. Lyster—Warm water in large quantities will, I believe, increase a tendency to abort, simply by pressure on the viscera.

Dr. Norton—Cathartics often seem to coöperate in producing this result, but I believe that nothing is really specific.

Dr. Duffield—Ergot, in a fresh state, seems to have a tendency in this direction.

Dr. McGraw—Sometimes the effect of ergot seems to be an opposite one. I believe that I have prevented a miscarriage by means of this drug, even after life has appeared.

W. H. LATHROP,
Secretary.

Selections.

HYPODERMIC TREATMENT OF SYPHILIS WITH MERCURY.

Much attention having been given lately in Europe to experiments illustrating the treatment of syphilitic disorders by the injecting of mercurial preparations beneath the skin, we believe that our readers will be gratified by an exposition of the present phase of this novel method. Our present purpose will be accomplished by presenting the substance of a paper contained in a late number of the *Gazette Hebdomadaire.* It will be observed that we use the French system of weights as in the original. Those who need the information will bear in mind that a gramme is equal to about 15 grains, and that a centigramme is the hundredth part of the gramme, and a milligramme the thousandth part.

The first serious attempts to cure constitutional syphilis by subcutaneous injections were made in Italy, by Scarenzio, who employed 20 to 30 centigrammes of calomel suspended in one gramme or more of glycerine or mucilage. Of eight patients seven were cured, though abscesses were formed at the point of insertion. It is but just to state that Drs. Charles Hunter, Hebra, and others, had already made some experiments with this method by using corrosive sublimate.

In Germany, however, the plan was first tried on an extensive scale by George Lewyn, of Berlin, who published a work founded on 700 cases thus treated. The solution adopted by him was composed of corrosive sublimate 20 centigrammes, distilled water 30 grammes. Each injection of 75 centigrammes contained about 5 milligrammes of sublimate, the minimum dose; the maximum being 10 milligrammes. The places selected were the chest, the dorsal surface of the arm, and the back; to avoid abscesses the places were changed frequently. The proportion of abscesses was 2 or 3 in 100 cases. The number of injections averaged 16, and one daily to each patient. The mean quantity required to effect a cure was three grains.

This treatment was pursued in 710 cases, of which 144 were males and 556 females. In 195 of the cases, mercurial stomatitis resulted, viz: in 51 per cent of males and 40 per cent of females, from which it would appear that men were more susceptible than women to the constitutional action of mercury used in this manner. Iodide of potassium, sarsaparilla, and other adjuncts were employed at the same time. The proportion of relapses after this treatment was 23 per cent, while the proportion of relapses after the ordinary treatment without the injections was 81 per cent.

The advantages of this method are thus set forth: The syphilitic symptoms disappear rapidly, and the rapidity is in proportion to the quantity of sublimate daily injected. In cases of iritis, cured in from five to seven days, the quantity reached one-half, and even three-fourths of a grain per day, at two injections. Obstinate cases and affections of the throat submitted in like manner. The method is sure and precise, as is proved by the study of 900 cases in two years and a half. It is efficacious in two forms of obstinate syphilis, exostosis and the cerebral form. It diminishes the number of relapses or renders them lighter. In fine, it is more easily applied.

Eight cases are reported by Bœse, with the following results: In eight days, with 18 centigrammes of the medicine, the eruptions vanished; the ulcerations of the pharynx, mouth, and genital organs, in 20 days, with 46 centigrammes; condylomata in 30 days, with 60 centigrammes. Abscess in one case and salivation in two. The doses here were much larger than those of Lewyn.

Five cases are reported by Klemm, in which one injection of five to seven and a half millegrammes was used daily. The eruptions disappeared after seven injections in one case, and eight in another; ulcerations in 18 to 20 days. There were no abscesses.

The experience of Merscheim was different in some respects. In 18 cases, with two injections daily, the mean duration of the treatment was thirty days. One cause which prolonged the time was the interruption of the treatment when constitutional symptoms appeared. But those symptoms were not more frequent than under other treatment. Abscesses occurred several times, and so much pain as to require the patient to take his bed. Though the success and precision of the method were confirmed by Merscheim, yet he did not find the same harmlessness as the former observers. Troubles of digestion occurred, and more than one patient preferred the ordinary treatment to the painful accidents which followed the injections.

More important are the observations of Grünfeld, of Vienna, based on 50 cases, with 7½ millegrammes as the ordinary dose, once a day. The entire quantity had a mean for each patient of 19 centigrammes, the minimum being 10.5 and the maximum 39. This was rather more than the doses of Lewyn. The injections were always accompanied with a sense of burning more or less acute, the intensity varying with the sensibility of the patient, the quantity and concentration of the liquid, the size of the canula, and the dexterity of the operator. The local symptoms were very variable. When the injection was not inserted deeply, a number of vesicles were formed under the epidermis in from five to ten minutes. These might become a starting point of dermatitis or of abscess; though in 1,105 injections, Grünfeld observed only two abscesses. It is better to avoid parts where lymphatics abound, and to choose the chest, the hypochondria, and the lateral portions of the back.

The effects on the organism are mercurial stomatitis, the presence of mercury in the products of excretion and secretion, particularly in the urine, and the disappearance of syphilitic symptoms. Stomatitis was less frequent than in Lewyn's cases, and became ulcerous in but one instance. Nevertheless this complication was more frequent than in the ordinary treatment by frictions, and was less amenable to prophylactic agents.

The injection passed rapidly into the economy, as analysis of the urine demonstrated. The smallest quantity from which this result followed was 12 millegrammes.

Under the influence of the treatment, the syphilitic symptoms were observed to disappear one by one. In a few days an amelioration was marked. Maculæ vanished in eight days, papular eruptions in three weeks, psoriasis in four, and pustular syphilides in five or six weeks. Ulcerations of the pharynx and larynx were very rapidly improved. Tropical treatment, as in other methods, was found most efficacious in local lessions of the genital organs. Induration and infiltration of the lips existed the longest.

Grünfeld comes to the conclusion, that although the treatment by injection of corrosive sublimate is more rapid and certain, and more secure against relapse, yet the pain which it may produce and the possibility of abscess counterbalance the advantages over other methods. It can not replace the treatment by frictions, unless in cases which forbid frictions and internal treatment.

Stöhr, at Wurzburg, who reports 90 cases, is still less enthusiastic in favor of the new treatment. He advises great care in using the injection, so as to penetrate to the cellular tissue. Absorption is more rapid when the liquid is warm. The point of insertion is at once elevated like a papule of urticaria. In two minutes comes a sensation of pain, due to the chemical action of the sublimate on the nerves. It is sometimes so severe as to make the patient roll on his bed. Phenomena of disturbed innervation are produced, such as rigors, muscular twitching, dyspnea, etc. Two cases of syncope occurred in hysterical women. This pain has a mean duration of from three to four hours.

The general symptoms of the absorption of the mercury are in common well pronounced. Thus, with a dose of one-fourth grain of sublimate, the patient perceives a metallic taste in half an hour. Smaller doses present the same effect in some individuals. When one-fourth of a grain is continued every day, mercurial stomatitis appears in a very decided form, commencing slightly on the third or fourth day, and becoming severe about the eighth or ninth. To sum up, after the administration of 2 or 2½ grains, the stomatitis is so severe as to demand the suspension of the medicine. With the ordinary dose of one-eighth of a grain, salivation comes on more tardily.

With a half grain of sublimate, gastric troubles, in the form of vomiting and precordial pain, are rapidly developed. Bloody diarrhea very often results from the injection of one-eighth grain, repeated until 2½ grains have been inserted. The general effect is well marked, the patients growing feeble and resembling, after this treatment, persons convalescing from grave disorders. The injections produce frequency of pulse and fever, the temperature reaching as high as 104°.

The testimony of Stöhr is not favorable to the treatment in mild cases. The mean duration of 27 cases so treated was 23 days, against 25 days as the mean in 27 cases by inunction. The mean total dose was the same as Lewyn's, 3 grains. Nevertheless, the injections acted promptly in squamous ulceration and postular affections. He concludes in these words: "The employ ment of subcutaneous injections of corrosive sublimate for the cure of syphilitic affections is the most superficial and the least practicable mercurial treatment yet proposed."

But though not suited to the lighter forms of disease, the hypodermic method is adapted to old and obstinate cases which have resisted other agents. It is also applicable to iritis and severe ulcerative affections of the larynx when prompt action is necessary, and in serious and extensive cutaneous disease, which does not admit of inunctions. It is not appropriate for feeble, cachectic individuals, nor for patients who can not remain at rest.

To relieve the pain incident to the operation, Lewyn has resorted to morphia, injected with the sublimate. It is singular that this was not sooner thought of, especially as the cure of many cases of the disease is facilitated by the preparations of opium.

The foregoing statements refer only to corrosive sublimate. Aimé Martin reports two cases of obstinate tertiary syphilis treated by injecting the red iodide of mercury with iodide of potassium. The rapidity of action in these cases was surprising. In the first, two injections, eight days apart, removed alopecia, papules on the hands and feet, deep ulcerations of the mouth, and mucous placques of the anus. In the second, symptoms of equal magnitude, which had resisted mercurial frictions, disappeared in a few days. If these results be sustained by further experience, their value will be incalculable. The quantity of the bin-iodide of mercury used at each injection was about the third of a grain. The quantity of the iodide of potassium is not stated; but as the volume of the solution injected was but half a gramme, it is probable that the main purpose of the potassium salt was to dissolve the mercurial iodide.

In the meantime endeavors are made to find a mercurial solution for injection which will not give rise to so much local irritation. Perhaps that employed by Aimé Martin will answer. Bricheteau proposes a solution of a double iodide of mercury and sodium. It will not be a long time before the choice of means will be determined, and the value of the hypodermic treatment of syphilis ascertained. The result will be looked for with much interest by the profession everywhere. We trust the method will not share the fate of nine-tenths of the new remedies and new plans which blaze up with dazzling brightness and then vanish.—*Cincinnati Lancet and Observer.*

CHOREA AND PSYCHOSIS.

By Dr. Rudolf Arndt, Privatdocent in Greifswald.

THE author believes that chorea should be classed with ecstasy and catalepsy, as a disease which never appears except in company with mental disturbance of some sort. "The so-called pure chorea, in which the psychical symptoms are said to be absent—the truth being that they are only very slightly marked—is, in a certain degree, only the precursor of the fully-declared psychosis.

But, as many cases of morbid depression or of morbid exaltation of the self-consciousness do not lead to insanity or idiocy, so with many cases of chorea: most of them, in fact, pass over without coming to such stormy outbreaks as the laity would recognize as mental disturbances." He explains the origin of the latter by supposing that the stimulus exercised by the mental effort upon a given nervous centre—whether situated in the cord, or cerebellum, or corpora striata—affects other contiguous centres in an irregular manner. Instead of a "disturbance of the co-ordinating faculty," he prefers to speak of an increase of the reflex activity of the brain, caused by the weakening or paralysis of certain functions (among which is the will), which commonly act as a restraint upon this reflex activity.

Romberg assigns the origin of the associate movements to the spinal cord, and affirms their independence of the brain. He, however, gives many examples of the coincidence of chorea with disturbances of the brain; and Watson and Cullen are still stronger in their testimony. Bouchut-Bischoff supplies more testimony to the same effect. Barthez and Rilliet, Hasse and Wunderlich, agree in assigning to fright an important part as a cause of chorea. The latter observes that "irritability of temper is never absent, and often is the first symptom of the disease." Sée,* describing the *post-mortem* appearances of eighty-four cases, says that thirty-two presented more or less striking anomalies of the cerebral meninges; thickening, opacity, old and fresh exudations, besides tubercles and cerebral hyperæmia. In the cord and its membranes inflammatory processes were rare. Most of the other cases exhibited simple hyperæmia, serous infiltration of the meninges, etc., and only in six could nothing unusual be demonstrated.

In regard to the connection traced between chorea and rheumatism, he thinks that there is nothing proved beyond the frequency of the coincidence. He does not regard their causative connection as established upon rational grounds. A great many vague, rheumatoid pains can be explained much better upon Wunderlich's theory, that they are excentric projections of cerebral processes. A cardiac rheumatism may act as the incidental cause of an outbreak of chorea, just as may the swollen gum, the swollen and odontoid process of the axis, the pregnant uterus pressing upon the pelvic nerves, etc.; but a predisposition to chorea must exist in each instance, or the outbreak will not occur.

In further support of the view of the cerebral origin of chorea, it is observed that treatment adapted to relieve distinct psychoses is beneficial in chorea. Such treatment includes rest, moderate occupation, gentle exercise, tonics, arsenic, sulphur-baths, cold-baths, etc. Narcotics, on the other hand, with the exception of strychnia, "which is still doubtful," are hurtful in chorea, as in many other cerebral disorders, although often of service when the procurement of sleep is urgently required.

The faculty of speech is defined by the author as the power of executing muscular movements in order to convey our ideas to others; including not only the movements of the vocal muscles, but of those employed in pantomime. "A muscular impulse too strong or too weak, too long or too brief, explains all the phenomena of stuttering."

He considers that a good number of cases of dæmonomania or dæmonomelancholia are referable to chorea affecting mainly the organs or speech. The following cases are cited and explained upon this hypothesis:

R. was subject to violent muscular contractions, and involuntary exclamation of words without meaning, whenever he became excited. He was under the delusion that the Freemasons were the cause of these symptoms. Arndt explained the involuntary motions as choreoïd, and the delusions as arising in the natural superstition of a weak mind.

Bl. had suffered for some time from hallucinations, and finally killed his wife in an attack of melancholia. After fifteen years' detention in an asylum, he was apparently well, except that he was liable at times to utter strange, involuntary sounds. When asked why he made the noises, he said that he could not tell. "They came all at once. Probably the same spirit was the agent that drove him to murder his wife. Everything must have its cause; he certainly did not make the sounds of his own accord, and therefore some other must have made them, which other could be none else than some invisible being, a spirit. He did not believe in ghosts, and diabolism, but in his case there must be something of the sort assumed!" Arndt infers the delusions were sustained by the presence of the choreoïd movements.

He points out that the apparent contradictions in the motions, or even the speech of certain patients, may be explained upon the hypothesis of chorea, which he much prefers to that of "double consciousness" or "division of the ego."

Going further, he says that thought is but unvocalized speech; in many persons the normal condition is that all voluntary thought unconsciously moves the lips, tongue, etc. Abnormal and ungoverned thoughts, rushing every moment into the mind without connection or reason, may be instances of a process quite analogous to that of common chorea of the vocal apparatus, and to those involuntary utterances already described. If these irregularities in thought are associated with excitement of the auditory apparatus, or if the latter is the cause of the former, the patient may hear imaginary noises and words; and, in proportion as the mind becomes weakened, he is inclined to the delusion that such noises are of objective origin.—*Journal of Psychological Medicine.*

Syrup of Chocolate has been found to be an effectual vehicle for disguising the bitterness of quinia.

BROMIDE OF POTASSIUM IN DENTITION.

Dr. Salvatore Caro, in the *Medical Record*, strongly recommends the local application of this remedy to allay irritation of the gums in dentition. He says: " in the most severe cases of odontitis, either with or without ulcerated gums and loose bowels, I have never failed to relieve the child by the application of the bromide of potassium. Almost immediately after the first rubbing on the gums, from being turgid, swollen and red, they assume their natural color, and a certain amount of ease is felt. Saliva commences to dribble; and, as if by enchantment, agitation, carpopedal involuntary motion, vomiting and looseness of the bowels disappear. As the vomiting and diarrhea in this case are not the consequence of gastro-enteritis, but of an excitement of the stomach and the intestinal mucous membrane, owing to the inflamed condition of the gums, I suppose it will never be cured, either by scarification of the gums, or by the use of astringents or anodynes; but, as I shall hereafter prove, simply by the use of the bromide of potassium."—*Dental Cosmos.*

Rhigolene.—The impression that rhigolene is explosive, is refuted by the experiments of Dr. John D. Jackson, who has subjected it to many severe tests.

Pharmacy.

Elixir of Cinchona, Iron and Bismuth.—From the *Druggists' Circular* we clip the following process for making this excellent preparation:

℞. Cinchonæ (Calisaya)	℥iv.
Cinnamomi	aa. ℥ij.
Cort. aurantii	
Sem. coriandri	
Sem. anisi	aa. ʒij.
Sem. cardamomi	
Sem. carui	

Reduce to moderately fine powder and percolate with a menstruum composed of alcohol and whisky, of each a pint and a half, water four and one-half pints. Digest the percolate with freshly precipitated hydrated peroxide of iron, obtained by adding to four ounces of a solution of chloride of iron similar to that formed in the preparation of Tr. ferri chloridi before the addition of the alcohol, a sufficient quantity of aqua ammonia. Shake the mixture well at intervals till the whole of the cinchotannic acid is removed, which may be ascertained by testing a small quantity of the filtered liquid with a few drops of tincture of iron; if it continues to be blackened after twenty-four hours' digestion, a fresh portion of the oxide must be added, until the fluid is quite free from the objectionable ingredient. Finally, filter and add

Ferri pyrophosphatis	aa. ℥i.
Bismuthi citratis	
Syrupi simplicis	Oj.

The pyrophosphate should be previously dissolved in a small quantity of water; the bismuth salt must be dissolved in the requisite quantity of aqua ammonia, previously diluted with its volume of pure water, by aid of a gentle heat. After the addition of these ingredients a second filtration will often be necessary, to secure a perfect preparation.

SYRUP OF IODIDE OF IRON.—M. Jeaunel has observed that the addition of one five thousandth part of tartaric acid renders syrup of iodide of iron clear, when it has decomposed, and at the same time notably diminishes its disagreeable inky taste.—*Bull. de la Soc. de Pharm. de Bordeaux. Physician and Pharmaceutist.*

CHLORAL is most conveniently exhibited in the form of a mixture containing not over 40 grains to the fluid ounce, simple syrup flavored with peppermint being, perhaps, the best vehicle.

GELSEMIUM SEMPERVIRENS.—The January number of the *Am. Journal of Pharmacy* contains an interesting article entitled "A Contribution to our Knowledge of the Chemical Composition of Gelsemium Sempervirens," from the pen of Prof. Wormley, of the Starling Medical College. Believing that the subject will interest not a few of our readers, and having hardly space to transfer the article entire to our pages, we offer a brief *resumè* of its contents. Prof. W. was led to a somewhat careful study of gelsemium preparatory to a toxicological examination in a case of supposed poisoning by that drug. The preparation he examined was a fluid extract, or concentrated tincture, the form in which gelsemium is most commonly prescribed. The researches of Prof. W. led to the discovery and isolation of a new organic acid, which he proposes to call *gelseminic acid*, and an alkaloid, *gelseminia* or *gelsemia*, the true active principle of the drug. The acid may be separated from the fluid extract by the following process. The extract is evaporated to one-eighth of its volume to expel excess of alcohol. Water is then added, to precipitate the resinous matter held in solution by the alcohol, and after the mixture has stood for some hours this is separated by filtration. The liquid being again concentrated to small volume, and acidulated, if necessary, with a minute quantity of hydrochloric acid (one drop for each ounce of the fluid extract operated upon), is washed with several successive portions of ether, by which the acid is dissolved, and from which it is subsequently obtained in crystals by spontaneous evaporation. In the experiments of Prof. W., 16 fluid ounces of the extract yielded about two grains and a quarter of the pure acid. Gelseminic acid, in the pure state, is described as a colorless, odorless, nearly tasteless, solid, readily crystallizable from its aqueous or etherial solution, and generally assuming the form of groups or tufts of delicate needles. It requires for solution one thousand parts of cold water; in hot water it is more freely soluble, and it dissolves quite readily in ether and in chloroform. It forms, with the alkaline bases, crystallizable salts freely soluble in water. The salts formed with other bases are, for the most part, insoluble. The acid dissolves in concentrated nitric acid, imparting to it a yellow or reddish color, changed to a permanent blood red on adding an excess of ammonia. This reaction is extremely delicate and quite characteristic. The caustic alkalies cause the acid to assume a yellow color, and immediately dissolve it, forming with it salts, which impart to their solutions remarkable fluorescent properties. In strong solutions a distinct yellow color is observed by transmitted light, a bluish appearance under reflected light, and a deep blue coloration when placed in the path of the concentrated rays from a burning glass. This last appearance, resembling that manifested under the same circumstances by acid solutions of quinine, is observed even in extremely dilute solutions, such as those containing $\frac{1}{1000000}$ of their weight of the acid. The coloration may be readily distinguished in a test tube filled with water, to which a few drops of the fluid extract of gelsemium have been added, care being taken that the reaction of the fluid be slightly alkaline. It will be remembered that in quinine solutions a similar coloration is only observed while it has an acid reaction. By cautious heating, the acid may be sublimed at a temperature considerably above 212° F. without change, and the crystals thus produced may be examined under the microscope, or subjected to either of the tests just described.

Solutions of the salts of gelseminic acid have a slightly astringent taste, are readily decomposed by free acids, with separation of the organic acid in crystalline form, provided they be sufficiently concentrated. The salts of most of the heavy metals precipitate the acid also, in the form of an insoluble compound with the metallic base. Nitrate of silver gives a yellow or yellowish brown precipitate, which soon acquires a black color, and becomes insoluble in nitric acid. In dilute solutions the precipitate, but slowly formed, is distinctly black, or the fluid assumes merely a purplish or blackish color. Other reactions are mentioned by Prof. W., but these are sufficient for the identification of gelseminic acid.

Gelseminia may be obtained by treating the residue of the extract from which the gelseminic acid has been extracted, with successive portions of chloroform, having first added potash to alkaline reaction. On evaporation of the chloroform, a hard, gum-like residue is obtained, which contains the alkaloid, contaminated with much foreign matter. This residue is to be digested in water containing a small quantity of hydrochloric acid, when, on adding slight excess of caustic potash, the alkaloid is thrown down as a light colored deposit. By repeating this process, and finally extracting with ether, the alkaloid may be extracted nearly pure. Ten fluid ounces of the extracted yielded under this treatment about four grains of the alkaloid.

By experiments made upon animals, it was proved to possess powerfully poisonous properties. An eighth of a grain administered to a strong, healthy cat by hypodermic injection, proved fatal in an hour and a half. The symptoms were those of great prostration, with paralysis of the limbs. The pulse became extremely quick and feeble, respiration reduced and gasping, pupils widely dilated.

Gelsiminia is a colorless, odorless solid, having an intensely bitter, persistent taste. It has not yet been obtained in crystals. It is only sparingly soluble in water, but freely so in both ether and chloroform. Of its salts, the sulphate, nitrate, chloride and acetate, are readily soluble in water. If a drop of sulphuric acid be added to a little of the alkaloid, or any of its colorless salts, it causes it to assume a reddish brown color, and dissolves it to a reddish solution. On heating gently it assumes a beautiful purple color. On heating the alkaloid to a temperature somewhat below 212° F., it fuses, and at a higher temperature is dissipated in fumes, which condensed on a surface of warmed glass in the form of minute drops.

In solutions of the salts of gelseminia, carbazotic acid produces a yellow, or greenish yellow, amorphous precipitate. Iodine dissolved in iodide of potassium produces a brown, or, in dilute solutions, a chocolate colored deposit; bromine in hydrobromic acid, a flocculent precipitate, more or less distinctly yellow. Chloride of gold and bi-chloride of platinum occasion yellow amorphous precipitates. Precipitates are also produced by sulphocyanide and ferrocyanide of potassium and corrosive sublimate. On the whole, however, the reactions are not by any means as characteristic or as delicate as those of gelseminic acid, so that in cases of poisoning the presence of the latter may sometimes be demonstrated, while the alkaloid escapes detection.

The existence of a powerfully poisonous organic base in gelsemium has been long suspected, but its properties have not hitherto been fully investigated, and the alkaloid itself has not hitherto been isolated, to our knowledge. The contribution which Prof. Wormley has made to chemistry and toxicology is one whose value will be appreciated by every one who takes an interest in these departments of medical and medico-legal research.

Editorial.

ELEGANCE IN PRESCRIPTIONS.

In no department of medicine has more visible progress been made than in the art of exhibiting drugs in an attractive and palatable form. The approach to this has been gradual, from the home brewed decoctions of simples and the nauseous boluses of early practitioners, to the elegant elixirs and tempting sugar-coated granules of the present day. In this advance we see but an illustration of the cultivation and refinement of the age. We beautify our homes with pictures, statuary, and comfortably tasteful furniture, and gratify our palates with food prepared with an eye to attractiveness of appearance as well as delicacy and toothsomeness of flavor, in proportion as we attain higher degrees of mental culture and refinement. We realize, practically, if it is not acknowledged openly, that the corporeal organism is worthy of careful attention. The ascetic days have passed when mortification of the flesh was deemed needful to the highest development of the man; ignoring the first work which man was set to do, "to dress the garden and keep it"—a garden especially fitted to afford gratification to the corporeal nature, wherein were all things pleasant to the eye and good for food. God has not underrated the importance of the body; indeed he has made its healthy condition the necessary state for the highest degree of attainment of the mental powers; and finally, to crown all, in the New Testament we are still further impressed with the Divine consideration for the physical organization, by elaborate accounts of the perfection which it will possess in the future state, a condition which, in addition to the æsthetic pleasures it offers, is described as possessing, in a wonderful degree, material glory, fitted to give the highest enjoyment to an organized body. We do not anywhere find that the Creator regards our bodies as less worthy of His attention than our minds. This much in explanation of the causes whieh have tended to advance the science of pharmacy.

The opinion has held ground that a physician's duty is fulfilled when suitable medicines have been ordered for the patient, and that it is an unnecessary refinement to attempt to render the dose less disgusting; so universal has been the neglect in this direction, that it has become a hereditary slur against the profession. We deem this a grave error; first, because it is oftentimes an actual detriment to the patient, especially in the case of children, where, rather than distress the sufferer, attendants will neglect the physician's directions, or, if they are enforced, it is only at the expense of a violent struggle, exhausting at least, perhaps dangerous, in the weak state of the child.

It is also injurious to the reputation of the physician, particularly in these days when it is proved that remedies may, in most cases, be rendered palatable, or at worst the disagreeable qualities nearly hidden; a knowledge of this is so general, that often carelessness costs one a valuable patron.

In making out prescriptions it is needful to consider the character of the drug in regard to its solubility in various menstrua, and its relations to flavoring materials, as, for instance, quinine, which in solution, in anti-periodic doses, defies all attempt at mitigating its bitterness. In mixtures, on the contrary, containing syrup or mucilage, especially if some mild astringent, as coffee, ext. logwood, or aromatic ext. rhubarb, be added in quantity sufficient to hinder the solution of the salt, the bitterness will be slightly developed, the powder being chiefly held in suspension. Chloral, with many flavors, retains very prominently its unpleasant pungency, but a few drops of essence of peppermint or spearmint in a dilute sweetened solution will make the draught rather agreeable than otherwise. Valerian, a remedy held in intense abomination by many, when exhibited as an elixir and properly aromatized, loses most of its vileness. Again, the various bitters, so constantly indicated in general practice, by a little care in the selection and combination of flavors and coloring matter, and the quantity of sugar and alcohol when desired, with the proper degree of dilution, assume the qualities of agreeable cordials rather to be desired than avoided. Study and practice is necessary on the part of the physician to attain skill in the art of making pleasant combinations, but when acquired it well repays the labor involved.

Nothing is lost by following the predilection of patients in regard to the form in which remedies are to be exhibited. Some prefer liquid preparations, others powders or pills, while there are many to whom the idea of a pill is utterly repugnant. Pills are not necessarily more disagreeable in appearance than candy drops; the sugar-coated pills offered by several of our most reliable business firms are conscientiously prepared, with a view to their ready solubility in the stomach, and several years' experience with them has convinced us of their reliability. The physician should assure himself that the specimens dispensed *are* properly prepared, or he may find them discharged unchanged *per anum*. In writing formulæ for pills, small size should be aimed at, two small ones being generally more acceptable than one large one. The amount of excipient should be definitely stated and not left to the judgment of the dispensing clerk. If the completed pills are coated with thick mucilage and then rolled in some delicately tinted powder instead of the dirt colored licorice so generally used, a tempting globule will result, which even the most fastidious will not refuse.

It is no detriment to the dignity of the doctor to take into consideration the æsthetics of prescribing, and the discomfort and distress inflicted upon willing but weak stomachs by his neglect of this important part of his education, will very materially add to the weariness and distress of the sick room. Indeed, the same inattention and carelessness on the part of the cook in preparing the doctor's own dinner would certainly insure her discharge.

MEDICAL COLLEGE CONVENTION.

To the Trustees and Faculties of the Medical Colleges in the United States:

The undersigned committee, in accordance with the instructions of the Convention of Delegates from Medical Colleges, held in Cincinnati, in May, 1866, respectfully and earnestly invite you to send delegates to a convention, to be held in the city of Washington, on *Friday* preceding the *first* Tuesday in May, 1870, for the purpose of considering all subjects connected with medical college education, and procuring the coöperation of the Schools in carrying out a uniform system of instruction. It is very desirable that every regular medical college in this country should be represented in the Convention.

N. S. DAVIS,
S. D. GROSS,
GEORGE C. BLACKMAN,
F. DONALDSON,
Committee.

CHICAGO, ILL., Dec. 22, 1869.

PUBLICATIONS RECEIVED.

ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTE for the year 1868. Washington Government Printing Office. 1869. Pp. 450, 8vo.

This volume contains, as usual, in addition to the report of the operations and expenditures of the institution for the current year, an appendix made up of papers from various sources, selected either for their intrinsic merit, or for the scientific interest of the subject of which they treat. Among the most interesting of these are, Memoirs of Cuvier and Oersted, the former by M. Flourens, the latter by C. M. Éliede Beaumont; an Essay on the Principles of the Mechanical Theory of Heat, by Dr. Müller, of the University of Freiburg; a Lecture on Radiation, by Prof. Tyndall; a Treatise on the Composition of Meteorites, by M. Danbrée, and several contributions to the new science of Anthropology. The expenditures of the Institute for the year 1868 amounted to $57,000, nearly half of which was consumed in building and repairs. Of the remainder, $10,000 were devoted to keeping up the library and museum, $7,000 to publication of transactions, researches, etc., and less than $2,000 to explorations and collections in natural history and archæology.

The operations of the Institute for three years past have been cramped by financial embarrassment, resulting from the losses by the fire of 1865. This burden, however, is now happily removed, and the institution will hereafter be able to pursue and extend its scientific researches with greater vigor and efficiency.

TRANSACTIONS OF THE STATE MEDICAL SOCIETY OF MICHIGAN for the year 1869. Pp. 72.

We think this report proves that the Society had better attempt the publication of its proceedings not oftener than once in two years, unless more matter is accumulated than has been heretofore. The present pamphlet is exceedingly diminutive to put forth as the results of a year's labor on the part of the profession of a great and prosperous commonwealth. We observe that the committee have embodied an old report on hygiene, presented three years since. Why were sundry other reports which were read, so far slighted? Drs. Lyster and Jenks presented valuable reports upon surgery and obstetrics, which were not called for. Other interesting voluntary papers were also read. These communications were not published a year since, because the Society ordered that only the minutes of the meeting in 1867 should be printed. We remember that the chairman of the committee on hygiene entered his complaint a year ago that he was neglected. We hope his feelings are now measurably soothed.

THE OREGON MEDICAL AND SURGICAL REPORTER. Edited by E. R. Fisk, A. M., M. D., Professor of Theory and Practice, Willamette University.

This is the pioneer number of a new medical journal published at Salem, Oregon, which we hope to place permanently on our exchange list. We welcome to the editorial fraternity the enterprising members of the medical faculty of Willamette University, with whom this publication originates, and we trust that their medical confrères in the State will give to it that cordial support which it deserves.

THE PATHOLOGY OF BRIGHT'S DISEASE. By Wm. B. Lewis, M. D. From the publishers, Turner & Mignard, New York.

This monograph presents briefly what is at present recognized as the true pathology of the assemblage of diseases comprehended under the term Bright's kidney. The illustrations are very good and show the distinctive anatomical lesions which occur in the various forms.

The *European Medical News* is a new periodical edited by Robert Stone, M. D., of New Haven, Conn., and published in New York city. It will be issued on the 15th of every alternate month, commencing with March 15th, 1870. It will consist exclusively of selections from the prominent medical, surgical and scientific journals of Europe, and will no doubt prove a valuable addition to our periodical medical literature. Among the articles published in the advance number that has come to us, we find "A Contribution to the Study of Intraocular Tumors," by A. Graefe; a paper on "The Hypodermic Injection of Ergotin in Aneurism," by Langenbeck; besides others by authors scarcely less noted.

The *Western Journal of Medicine* appears this month in a new garb and under a new name, as the *American Practitioner*. In typographical appearance it now compares favorably with the best journals published in the East, while its editorial staff is strengthened by the association with Dr. Parvin of Dr. David W. Yandell, a name already widely and favorably known to the profession.

LAST ILLNESS OF DR. ALDEN MARCH. A criticism on the management of his case. Reprinted from the New York *Medical Journal* of January, 1870. From the author.

THE Sum and Substance of Antiseptic Surgery. By E. Andrews, M. D., Professor of Principles and Practice of Surgery in Chicago Medical College. From the author.

REPORT of the Committee on the Relations of Alcohol to Medicine. By Geo. Bell, M. D., chairman. From the Proceedings of American Medical Association.

TRANSACTIONS of the American Ophthalmological Society; sixth annual meeting. Also of the second annual meeting of the American Otological Society.

THE REGISTER OF RURAL AFFAIRS for 1870 is filled with useful items, not only to farmers, but to any one with a home and a garden.

FORTY-FOURTH ANNUAL REPORT of the Managers of the Massachusetts Charitable Eye and Ear Infirmary.

LIBRARY

DETROIT
Review of Medicine and Pharmacy.

VOL. V. MARCH, 1870. No. 3.

NOTES OF TEN CASES OF PROLAPSED FUNIS.

Paper read before Wayne County Medical Society, December, 1869, by E. P. Christian, M. D.

CASE 1.—Mrs. N., Irish, ninth labor. All previous labors natural. When called in she had been in labor about five hours, attended by a woman. Examination revealed a fold of the cord protruding from vagina, cold and pulseless, and compressed by the head, already advancing under the pubis. Patient delivered by natural unaided pains, in half an hour, of a dead *boy*.

CASE 2.—Mrs. G., German woman, fifth labor. On being summoned, found an extruded fold of the funis reaching to the patient's knees. Pains active. All efforts to relieve were unsuccessful, and after a protracted and severe labor, the woman was delivered of a dead *boy*, weighing about 12 pounds. All her children at birth were very large. Length of funis, measured after expulsion of placenta, 48 inches.

CASE 3.—Mrs. B., Canadian French, third labor. On visiting and examining patient, found labor actively progressing; os uteri well dilated, and bag of waters protruding, which I immediately ruptured, and with the ensuing gush of water, found a fold of the cord in my hand. This I immediately passed up over the descending head, and labor was soon terminated by expulsion of a living *boy*.

CASE 4.—Mrs. Q., Irish, fourth labor. Found cord already some time prolapsed at my visit. Pains vigorous, and labor progressing rapidly. I failed in my efforts to replace the cord, and labor soon terminated by delivery of a dead *boy*.

Case 5.—Mrs. K., Irish, seventh labor. Was summoned to the patient in the evening, after she had been all day under care of a midwife. Found a prolapsed funis, but pulsations and temperature natural. Head engaging under pubis. Applied forceps, and delivered a living *boy*.

Case 6.—Mrs. N., German woman, fourth labor. Called in at 8 P. M. Patient under care of midwife since morning. Discovered a shoulder presentation, to remedy which I had been called in. The left arm of the child, with a fold of the funis, occupied the vagina. Woman much exhausted from the ineffectual pains and indiscreet efforts of the attendant to remedy the difficulty. I at once turned the child, and delivered a dead *boy*.

Case 7.—Mrs. G., German (same patient as case 2, in her fifth labor; this her ninth labor). On being summoned, and making examination, found labor well advanced; bag of water occupying vagina; pains vigorous. I ruptured the bag at ensuing pain, and found my hand filled with coils of the cord. I at once placed the patient on her knees and elbows, in the position recommended by Dr. T. G. Thomas, of New York, and succeeded in returning the cord, and so long as the woman could retain this position there was no descent of it; but as the position soon became intolerable (the patient being a large, fleshy woman), she turned herself again on her back, when the cord again descended. The child was soon after born dead—*boy*. The cord in this case, as in her fifth labor, which was attended by the same complication, was exceedingly long, but its exact measurement was not ascertained.

Case 8.—Mrs. C., Polish woman, ninth labor. Was called to patient in the morning, after she had been in care of a midwife all night. Woman worn out with tedious and severe labor throughout the night. Head well descended, but pains now inefficient and making no progress. Cord protruding from vagina; cold, pulseless and flaccid; child doubtless dead for some hours. Applied forceps, and delivered dead *boy*. Child very large.

Case 9.—Mrs. K., Irish woman, eighth labor (same patient as case 5, in her seventh labor, at that time delivered with safety to mother and child, by forceps). In this case placed the patient on elbows and knees, and replaced the cord; then turned her on her back, and everything being favorable, applied forceps and delivered a living *boy*.

Case 10.—Mrs. V., American, ninth labor. After being several hours in labor, attended by a woman, her husband came to me with the message that something was wrong. Examination revealed a long fold of the funis protruding from vagina. Pulsations good, and normal temperature. Labor progressing favorably. I placed the patient on her knees and elbows and replaced the cord, and in a short time labor terminated by birth of a living child—a *girl*.

There are several points in this collection of cases worthy of remark. The first is the remarkable fact of the great excess of male infants in the labors in which this complication occurred. Nine of the ten children were boys. Such authorities, limited in number, as I have the opportunity of referring to, make no mention of the relative frequency of male or female births in it. The preponderance of male births in this collection may be only a singular accidental coincidence, but the fact is worth attention. While, according to such authorities as I have been able to refer to, the proportion of these accidents to the whole number of labors has varied with different obstetricians from one in 383 (*Mad. Lachapelle) to one in 45 (Machaelis), amounting, in Dr. Churchill's summary of 90,983 cases, to 322, or one in about 282, my own have occurred in the ratio of one to about 91 labors at or near full term. But what is singular is that five of the ten occurred within the past year, so that while the ratio of the first half is as one to 166 labors, that of the last half is as one to a fraction less than 18.

The record of the ten cases shows six dead and four living children, which proportion is not very different from that given by Churchill, viz: 220 deaths of children in 355 cases, or nearly two-thirds; "though," says Cazeaux, in commenting on the subject, "it is worthy of remark that in many of these cases the mothers were not transported to the hospital until some time after the descent of the cord, and when its pulsations had entirely ceased." And so, too, it may be said of these cases (and the same will doubtless hold true of all such in private practice) that a considerable proportion were, in the early stages, under the care of women, and not seen by the physician until the cord had been a considerable time prolapsed. Of these ten cases, four were in women who, although each of multiple births, yet had never been attended before by a physician; but always heretofore trusted to the care of women attendants, and it was only because of the discovery of something wrong that the aid of a physician was sought. This will hold, then, in private as well as hospital practice, as a rule: that a considerable proportion of cases will be beyond the aid of the physician, as far as the child is concerned, before he is summoned.

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* Cazeaux remarks on this: "It is probable, as she appears to think herself, that there has been an error in the registers, for the statements given by other authors show a much larger proportion."

For this reason, I conclude that the proportion of still-born to living children will not materially differ in private or hospital practice.

Of the ten cases, six were delivered by unaided uterine efforts; and of these six, four were still-born and two living.

Of the four still-born, two, at least, were dead when called in; and in the other two efforts at reduction were unsuccessful.

Of the two living children, in one the prolapse was reduced in the normal position of the patient, on her back; the other by causing the patient to assume the position of Dr. Thomas called by him postural treatment, on the knees and elbows, in which position the cord was replaced and kept until the head had sufficiently engaged under the pubis to prevent danger of relapse.

In one of the unsuccessful cases the cord was also reduced in this position, but the patient was unable to maintain it on account of fatigue, sufficiently long and the cord immediately fell down on change of position, and becoming strangulated by the head, engaging in the bones, the child was lost.

Of the four cases where artificial aid was used to effect delivery, three were delivered by forceps and one by version.

Two of the forceps cases were successive deliveries of the same woman, her seventh and eighth labors.

In both the child was born living, but in the last the cord was reduced while on her hands and knees before applying forceps.

In both these cases the instruments were used simply and only to expedite delivery for the safety of the child, there being no contra-indications to their use. The result fully justified the practice.

In the other forceps case, the patient had been a whole night under care of a woman, the child was already dead, head impacted and woman exhausted. In this case the forceps were used out of consideration for the mother, to terminate an already too long delayed delivery.

One case was of podalic version, in which an arm and funis presented. This case, too, had been under the care of a woman until the patient was much exhausted. When called in I turned and delivered at once, but child was born dead.

Cases 2 and 7 were in one woman, her fifth and ninth labors; so also cases 5 and 9 were in one woman, her seventh and eighth labors, both of which were terminated *cito, tuto et jucunde* by forceps.

In case 2 the funis was measured after expulsion of placenta and found to measure 48 inches. The funis was observed to be long in most of the cases, but in no other approaching this excessive elongation.

All the cases were in multiparæ from third to ninth labors; and all in women of capacious pelves, as manifested by speedy and easy deliveries for the most part in these complicated cases or in a number of preceding ones; in the exceptional cases the delay arising not from incapacity of pelvis but from disproportionate size of child or malposition.

All the mothers recovered without unusual delay or subsequent complications except case 8, Mrs. C., the Polander in whom the injury from long impacted head occasioned considerable *post-partum* metritis, which required active treatment to combat. Her recovery however was complete.

THE death of a child has occurred, in Northumberland, England, from eating the water hemlock.

THE OLD VEGETABLE NEUROTICS OF DR. HARLEY—RELATION OF SVAPNIA WITH CRUDE OPIUM AND MORPHIA.

By J. M. Bigelow, M. D.

PART 2D. THERAPEUTICAL.

IN part first, we have endeavored to give a plain and concise view of the physiological effects of the constituent alkaloids of opium, both singly and in combination, upon the human system. In our present paper, it is our purpose to consider them in their therapeutical aspects.

Briefly, the following is a list of the more prominent diseases in which opium, or some of its alkaloids, may be beneficially employed: Typhus, typhoid fever, small-pox, measles, scarlet fever and other eruptive fevers; malarious intermittents and remittents, inflammations, hémorrhages, gangrene, insommia, insanity, delirium tremens, inflammation of the nervous centres, epilepsy, hysteria, puerperal eclampsia, and other convulsive diseases; chorea, tetanus, neuralgia, pneumonia, pleuritis, spasmodic asthma and other affections of the respiratory organs; gastralgia, vomiting, diarrhœa, dysentery, chronic dysentery, cholera sporadic and epidemic, and other diseases of the digestive organs; colic, colica pictonum, painful passage of gall stones, invagination of intestines, hernia, peritonitis, idiopathic and puerperal enteritis, nephritic colic, nephritis, spasm of the urethra, lithiasis, metritis, cistitis, urethritis, threatened abortion, syphilis in its various stages, nodes, gonorrhœa, chordee, diabetes, acute rheumatism, chronic rheumatism, gout, retrocedent gout; and locally in rheumatism, neuralgia, tetanus, unhealthy ulcers, otalgia and paronychia, etc.

Clinical experience, as well as the experiments of the physiologist, exhibit the fact that in very many cases some of the alkaloids, such as morphia, and thebaia as they exist in the crude drug, can not be tolerated even in the healthy system. How much easier and more certainly then will they cause functional disturbance in an already morbid state of the system!

Among the diseases enumerated in which, either in their initial or subsequent stages, the use of the various forms of opium is indicated, there are few, if any, that will not require other appropriate remedies in combination with opiates. It is not within the scope of our present purpose to enter into a detail of the specific mode in which these combinations may be made to produce the best results. These will be found fully discussed in all our works on the therapeutical action of medicines.

It will be found that there are many cases where the use of opium may be indicated, but accompanied with symptoms which forbid its safe employment. Thus when a dry, hot, parched skin attends a patient tortured with pain, who tosses about on a sleepless bed, opium by itself is not safe; but by choosing some preparation of the drug not liable to produce the peculiar sickening effects that often follow the exhibition of morphia or crude opium, and by combining it with acetate of ammonia or a diaphoretic dose of ipecac, we succeed to the admiration and gratitude of our patients, as well as to our own delight and approbation.

Or, when a patient is in a raving delirium, with at the same time a hot skin, instead of giving crude opium in which the thebaia is an active constituent having a tendency to further excite, rather than allay the already excited state of the brain, we give the purified opium, combined or not, as the case may require, with ipecac, restoring our patient to quietude and comfort. Have we not in such cases as these cause of gratulation both for our patients and ourselves?

If weakness and want of appetite should prevent the good effects of our remedy, the combination of quinine will produce a most propitious issue. If the presence of fever should render the use of purified opium hazardous, we have only to combine it with appropriate febrifuges to contribute to the restoration of our patients. How often have we to associate our medicine with aperients and gentle cathartics, in tendency to fullness of the head, to render it effective? So in bronchitis we combine it with camphor, and in diarrhœa with chalk, but to insure the full effect in all these cases, if the patient possess the idiosyncrasy that contra-indicates the successful use of either crude opium or morphia, we must resort to svapnia or some equivalent preparation of opium.

In the treatment of severe inflammation by opiates, the best illustration we can give is that of acute peritonitis, one of the most fearful we have to contend with.

In a case of this kind, even where well marked symptoms of perforation—in itself a most dreadful complication—were present, where the patient was sinking, the extremities cold, and the pulse hardly perceptible, the exhibition of a large dose of a preparation of opium in which the alkaloid thebaia had been eliminated, was followed by the most signal improvement.

The next day pressure upon the abdomen could be borne, whereas, the day preceding it was most exquisitely painful to the slightest touch. The pulse became full and soft, the extremities regained their normal temperature, while the countenance which before bore the characteristic Hippocratic expression, became placid and the mind tranquil and serene. Here, had crude opium or morphia been given, this happy result would not have been attained, unless the patient possessed that stolid temperament, which can endure any amount of excitement with impunity.

It must be kept in mind, also, that here success depends upon tranquillity of mind and body being kept up for a sufficient length of time to enable the conservative powers of the system to subdue the attendant disorganizing inflammation. If the opiate had been of a kind likely to produce a sickening retching of the stomach as morphia so often does, or a convulsive tendency of the motor nerves, as is the effect of thebaia, a fatal result would have been more than probable.

In the case, too, where perforation has certainly taken place, a complete passive state of the bowels is all important. Fatal cases have been known to result, after a cure had been almost completed, from an action of the bowels produced by the mildest aperient.

There is another class of combinations, in which we do not so much desire to effect an impression upon the system, as to produce a modification of the action of the remedy. Thus the combination of the narcotics and sedatives, conium, belladonna, hyoscyamus and stramonium with purified opium exhibit facts and principles, full of interest in illustration of this point. Conium by itself allays the excitement of the motor centres, thereby overcoming the restlessness and agitation of the muscular system and strongly predisposing the brain to sleep.

The combination of a minute portion of svapnia, intensifies the physiological and therapeutical effects of the conium, thus lessening the danger of a toxical effect, while on the other hand, opium alone sometimes fails to manifest its anodyne and soporific virtues, when the combination of conium will antagonize the excitant action of the opium, bringing a state of rest and quietude to every part of the body. What is lacking in the effects of the opium is made up by the effects of the conium.

The incipient tendency of opium to produce convulsive action of the muscular system is antagonized by the conium, and thus we are enabled to avail ourselves of the beneficial action of both, avoiding at the same time their disagreeable poisonous effects.

For example, in *delirium tremens*, the tendency of crude opium is to still further excite the brain and produce a dangerous hyperæmia, but the purified opium, being eliminated of the cryptopia and thebaia, the constituents most powerful in producing this functional lesion, can be substituted with most marked beneficial results; and its efficiency still further augmented by the addition of conium, which enables us to attain the desired end with a much diminished dose.

The combination of opium with hyoscyamus, like that of conium, tends to modify the action of both medicines. Opium intensifies the peculiar effects of hyoscyamus, accelerating the pulse 15 or 20 beats per minute for more than an hour. Hyoscyamus, to a certain degree, has the power of preventing the derangement of the pneumogastric nerve, the source of much trouble frequently in the exhibition of opium, and, at the same time, it enhances its hypnotic action. The circumstance of hyoscyamus being eliminated by the kidneys, offering thereby a therapeutical resource in many diseases, is not prevented by the modifying influence of svapnia, and therefore many advantages result from their combination.

Belladonna, as a therapeutical agent, has been increasing in popular favor very much within the last few years. Its power in averting inflammatory action, especially when in combination with opiates, is so well established among progressive and scientific professional men, that none but old fogies are found to raise a feeble and cackling voice against them. In practice, each is found to augment the therapeutical and remedial powers of the other, by which a lessened dose of each is capable of producing the desired effect.

Dr. Harley, so sanguine on this subject, from an extended experience in the sick room and at the experimenting table, is led to the conclusion, that inflammations of the most threatening aspects in their earliest stages, are completely within our control by the combined use of these two drugs. He says:—"In the treatment of *acute disease*, opium may be most beneficially combined with belladonna, and the appropriate mode of administration consists in the immediate introduction of these remedies beneath the skin, as soon as the inflammatory action has been detected. The relief to the constitutional irritation, and probably pain, and the retractile and stimulant action on the circulation, which immediately follow the use of these drugs, will often arrest with wonderful rapidity an inflammatory action (in the lungs *e. g.*), which from its severity and extent threatens soon to become dangerous to life. My own experience induces me to believe that by means of this treatment, inflammation in its earliest stages lies completely within our control. I have usually introduced a moderate dose of the drugs (acetate of morphia from $\frac{1}{8}$ to $\frac{1}{4}$, and sulphate of atropia $\frac{1}{96}$ to $\frac{1}{48}$ of a grain) by a single puncture, at intervals of eight or twelve hours.

"In the treatment of *neuralgia* and *insomnia*, the best effects are obtained by a combination of these drugs; and by judicious combinations, persons who cannot otherwise endure a dose of opium, may be brought under its beneficial influence. Morphia indeed should never, as a general rule, be injected alone, unless we have reason to know that the patient will experience no ill effects.

"To counteract those distressing and sometimes dangerous effects which follow the subcutaneous use of morphia, combination with $\frac{1}{96}$ of a grain of sulphate of atropia will usually be sufficient; and in some cases, it may be necessary to first induce the atropia action by such a dose, and then a quarter of an hour afterwards introduce the combined dose."—*The old Vegetable Neurotics, p. 302.*

In the mode of the administration of opium, within the past few years, there has been a great change. There are many advantages to be derived from its hypodermic use, but so many fatal cases have resulted from the indiscriminate use of morphia in that form, that many physicians who would otherwise be glad to avail themselves of it, on account of its prompt and decided action, are deterred from thus using it.

In the use of these active agents, a question of much moment occurs : Can we discriminate, before actual clinical experience is had, those persons upon whom thebaia as it exists in crude opium on the one hand, and morphia on the other, will have a sickening or convulsive tendency? As a general rule, great anxiety at the precordia, livid and anxious countenance, nausea, syncope, slow and weak pulse and difficulty of breathing, follow the use of morphia; while cramp, spasmodic twitchings of the respiratory muscles, delirium and convulsive movements, follow the use of the crude opium, in persons of a highly emotional, excitable and energetic temperament.

Women of this temperament are more easily impressed by the foregoing distressing symptoms, than men; and where the nervo-sanguine temperament is highly developed, we should exercise much caution in prescribing those two forms of opium.

Dr. Harley strictly enjoins the precaution to *never* give it in those temperaments hypodermically, unless the depressant effects on the one hand, or the excitant on the other, are controlled by countervailing means.

I have prepared, not a solution of svapnia, but a *liquid svapnia*, directly from opium containing exactly all the elements of svapnia in a concentrated form, by which it can be given under the skin just as conveniently as morphia. I am fain to believe, from an extended clinical experience with this preparation myself and from those of my friends who have used it, that it can be given hypodermically, in every variety of temperament, with much more safety than morphia correspondingly.

The subject of dose is of no minor importance, and it should be remembered that a much smaller quantity introduced under the skin, will produce the full effect of opium, than when exhibited by the stomach; but the graduation of the dose according to the habits of the patient in the use of it, must be observed the same.

Perhaps no article of the materia medica requires more care for its proper adjustment, to insure its desired effect in a state either of physiological or pathological exigency, than opium and its derivatives.

Habit, more than any other circumstance, diverges the maximum and mininum amount to be given to produce a given therapeutical effect; and this must be known to the prescribing physician, before he can intelligently rely upon a specific dose, to insure the varied resources of opium. In addition to this, the indications he has to meet and fulfill, and the contra-indications he has to supervise, must be co-ordinated with the nicest skill with regard to the nature and stage of the disease, the habit and constitution of the patient, and the particular preparation and dose to be used. When we know that opium consists of so many active constituents, whose physiological and toxicological actions are so varied, as instanced in that of morphia and thebaia, and those of cryptopia and codeia, we are at no loss to account for their occasional toxicological effects, and when introduced beneath the skin, where direct elimination is impossible, their sometimes fatal results.

Uniformity in the dose is what, in all these cases, is of the utmost importance to secure uniform and complete success; but this can never be attained with crude opium.

CLINICAL SURGERY.

By N. W. Webber, M. D., Professor of General and Descriptive Anatomy in Detroit Medical College. Reported by J. Henry Carstens.

GENTLEMEN—About three months ago this little girl, who is now seven years of age, first appeared before us, with the following history: Three years ago she commenced to limp and drag her left leg, and this increased until the leg became considerably shortened, with the toes turned in. Some ulcers then formed on the upper and outer side of the thigh. These ulcers or fistulas remained open about a year and then closed up permanently.

The limb became more and more drawn up to the abdomen, the hamstring muscles contracting also, causing double flexion of the thigh and leg. The history as given, plainly indicates that prevalent disease, morbus coxarius.

When she first came under our observation, I thought that by applying appropriate apparatus we might remedy this deformity without operative procedure, her mother naturally objecting to an operation until all other means of treatment were exhausted. We therefore had a splint made, which she wore for three months without any benefit. The leg was straightened out, but the thigh seemed to be nearly immovable; in fact any great amount of extension on the hip joint caused such severe pain as to be unendurable.

As her mother consents to an operation and the child is under the influence of ether, I shall proceed to cut the adductor muscles subcutaneously. By tenotomy we mean the subcutaneous division of the tendons of muscles. This mode of operating has been brought to the notice of surgeons especially by Delpach and Stromeyer, and has lately been more perfected by the labors of Tamplin.

The first muscle I shall cut is the sartorius, which has its origin at the anterior superior spinous process of the ilium. You see that I introduce this tenotome sideways beneath the tendon of the muscle, and now, turning the sharp edge out, by a kind of sawing motion sever it. You heard the tendon retract by a kind of snap, leaving a small gap between the ends. As the tensor vagina femoris seems to be quite tense, I shall now cut that. I have done so, without taking my knife out, and cut both muscles, making only a very small puncture in the skin. Two more muscles must be severed—gracilis and adductor longus. I here feel the pulsation at the femoral artery, which is outside of these tendons; introducing my knife as before, and by this to and fro motion the gracilis is divided, which you remember arises at the inner margin of the ramus of the pubis and ischium. I introduce my tenotome under the adductor longus, which arises at the junction of the crest and the symphysis; now that is also severed. But although the tense muscles are all divided the limb will not straighten, showing that there is some anchylosis, which I shall break forcibly. By firmly holding the pelvis, and by forcibly extending and rotating the limb, you hear that cracking; the limb is now more movable, but it does not straighten perfectly, which I think is caused by spasmodic contraction of the pectineus. By applying an appropriate splint we may confidently expect to tire out this muscle, and in the end have a straight limb.

In operating for just such difficulties as we have here, Dr. Sayers, of New York, has introduced his tenotome under the femoral vessels, and cut down to the bone, severing the fibres of the pectineus, effectually operating upon the last muscle that holds the limb in its abnormal position. The femoral vessels lie upon this and the inner margin of the psoas muscle, and working, as we do, entirely in the dark, it appears to me to be running a great risk to accomplish a very little, to operate in this way. The great advance made in the last few years in orthopædic surgery, with the vast amount of appliances to remedy deformities, offers ample means of at least experimenting before resorting to what will, in the long run, end in serious accidents.

You see this apparatus which I have had made, a long splint with a perineal band and a cross-piece at the foot, to which is attached an elastic band. I take this splint, and apply it to the sound limb, and by tightening the perineal band, keep the pelvis immovable. By now applying some adhesive straps to the diseased limb, and attaching them to the elastic band, we keep up a constant extension of the whole leg. I shall apply the splint loosely for a few days, that the child may become accustomed to it, and also that the lymph which is thrown out may firmly attach itself to the ends of the tendons. This plastic matter undergoes changes, till it closely resembles the divided tendons. If you extend the limb too soon the connection will be weakened and too much elongated. The apparatus must be kept on some time, till all is well healed, when I hope we shall have a very useful limb.

ONE of the therapeutic novelties is the injection (subcutaneously) of the bi-chloride of mercury in syphilis.

DETROIT ACADEMY OF MEDICINE.

JANUARY 11.

The President, Dr. Inglis, occupied the chair.

Dr. Noyes—I have a laryngoscopic lantern, which I will exhibit. It was invented by Dr. H. K. Oliver. The instrument is provided with a lamp, behind which is a reflecting surface, while the rays are concentrated in front of it by means of a double convex lens. By means of this arrangement, the mirror ordinarily used is regarded as unnecessary. I design to use the instrument in examining the ear. The sun is preferable, because some points in the diagnosis are best determined by the sun's rays. The light of a lamp imparts a peculiar color to the parts.

Dr. McGraw—I have often been troubled to make the sun's rays shine into the ear.

Dr. Noyes—To avoid this difficulty, I usually require patients to come at a certain hour in the day, so as to secure the direct rays of the sun.

Dr. Jenks—I have a morocco case to exhibit, which I have recently had made to contain a uterine scarificator and sound.

Dr. Andrews—The new remedy, *chloral*, referred to at the last meeting, I have tried in three cases. The first case was one of convulsions in a child three months old. It had had five convulsions, and was very restless and irritable. I administered the chloral in 2 gr. doses, and in fifteen minutes the child was quieted. Some exhaustion, however, seemed to follow the 2 gr. doses. One grain doses did not have that result. Another case was one of insomnia in a gentleman, from overwork. This case was relieved by the remedy in twenty grain doses. The third case was a child two years old. It was troubled with restlessness from teething. I gave the medicine in doses of one grain, but it seemed to do no good. Probably the dose was too small.

Dr. Gilbert then read a paper which he had prepared upon the subject of placenta prævia.

After the reading of the paper a vote of thanks was presented to Dr. Gilbert, and discussion followed upon the subject referred to in his paper.

Dr. Noyes—With regard to the injection of astringents into the uterus, I should prefer the application of a styptic to the tampon that is used. The gravid uterus tolerates astringents more readily than the unimpregnated uterus does.

Dr. Bigelow—I have had but one case of this character. It was one of partial placenta prævia. In this case version was performed, and both mother and child were saved.

Dr. Gilmartin—Barnes, of London, recommends detaching the placenta, plugging, and giving ergot.

Dr. Peter Stewart—I have quite recently had a case of placenta prævia. Both mother and child were saved. The woman was very anæmic when I was called to see her, she having lost a considerable quantity of blood. A midwife had been in attendance. I applied tannin and sugar of lead directly to the uterus with my hand. I then introduced a tampon and gave ergot in considerable doses. The tampon was not removed until pushed out by the head as it advanced. She fainted as soon as she was delivered, but soon revived, and is now doing well. It was four hours after the astringent was applied and the introduction of the tampon before delivery was completed. I regard it as dangerous to turn when the woman is in a low condition.

Dr. Andrews—I once had a case of the kind, in which the woman had been bleeding for four hours. Bleeding had ceased when I saw her, and the womb was fully dilated. She was dying when first seen. Delivery was easily effected, it being a five months fœtus. Transfusion might have been effective if it could have been applied.

Dr. Jenks—This case which Dr. Andrews reports must be a very rare one, on account of the age of the fœtus. Placenta prævia occurs, I believe, once in about five hundred cases. The hemorrhage is frequently as great in partial placenta prævia as in the complete form. Simpson says, with regard to the hemorrhage, that the blood proceeds from the placenta and not from the uterus. Hence he recommends that the placenta be detached as soon as possible. I am of the opinion that the blood proceeds from the *uterus*, in the same manner as in *post-partum* hemorrhage. I do not regard the attachment of the placenta as essential to the continuance of the hemorrhage. Barnes favors detachment and turning, because the contractile power of the uterus is impaired by the attachment of the placenta. In the treatment of the hemorrhage there seems to be great benefit derived from the use of the Barnes dilators and similar appliances. Ergot, in combination with opium, is advisable where the woman is exhausted. Version has been followed by great mortality, and on that account should, if possible, be avoided. The attachment of the placenta to the neck of the womb has sometimes resulted in uterine phlebitis.

Dr. Inglis—I am of the opinion that the hemorrhage comes from the detached portions of the placenta, and therefore the astringents should be applied to this part. In this way the astringents do not reach the uterus, and there is no danger of their injuring it, as feared by Dr. Gilbert. My first case of placenta prævia occurred early in practice. Great loss of blood had taken place when I saw the case. I removed the placenta with the hand, and then quickly turned. The woman died from exhaustion. Since then I have had some eight cases. In none of them have I removed the placenta or turned, and none of the cases have died. The great point is to prevent loss of blood. If the waters have not escaped, the tampon is almost certainly effective. Rest should be enjoined emphatically. In dangerous cases no attention should be paid to the life of the child. Let the mother run no risk. The children, I believe, are generally lost. The membranes should be kept unruptured as long as possible.

Dr. McGraw—Does hemorrhage continue when the uterus is contracted and pressing upon the fœtus?

Dr. Inglis—This is an interesting point in proof that the blood comes from the placenta, for while the uterus is contracted the blood still flows from the placenta at the os.

Dr. Jenks—The treatment is the same, from whichever source the blood may come. I think that facts show that less blood flows when the uterus is contracted. The os may be open while the longitudinal fibres of the uterus are contracted.

Dr. Gilbert—I am not inclined to favor the opinion of Prof.

Simpson, that the blood comes from the placenta. In the last case that I had, I found the placenta attached to a zone surrounding the internal os. What I said in my paper with regard to injections, referred entirely to fluids.

Dr. Gilmartin—I think that astringents in such cases are dangerous, whether solid or fluid.

Dr. Gilbert—I think that the powdered form is preferable.

Dr. Inglis—The astringent, at all events, is only an aid in the treatment.

Dr. Jenks—If the os is not well dilated the colpeurynter is, I think, preferable to an astringent tampon.

Dr. McGraw—It is important to crowd the tampon against the os.

Dr. Noyes—I like the astringent tampon.

Dr. Stewart—In the case which I have spoken of I broke the waters through the placenta and then found the hemorrhage less. The head, no doubt, formed a tampon.

Dr. Gilbert—There is no doubt that the tampon has, in most cases, been successful without astringents. In one case which I attended, the patient was pulseless when I first saw her, and I did not consider the tampon of any use. I turned, as a last resort, but the operation did not avail to save the patient's life. In another case, to which I was called in consultation, the woman seemed to have no uterine contractions. She bled to death, notwithstanding all the efforts made to save her. Galvanism might have availed in this case if it could have been applied.

Dr. McGraw—Galvanism must, in most of these cases, be entirely impracticable.

JANUARY 25.

Dr. Inglis occupied the chair, and Dr. Webber acted as Secretary.

EXHIBITION OF PATIENTS—ANOMALOUS POSITION OF THE THORACIC AND ABDOMINAL VISCERA—THE HEART ON THE RIGHT SIDE.

Dr. McGraw—I bring a boy ten years old whom I wish to present to the Academy. He was brought to me for treatment on account of a fancied spinal affection. I was able to discover no trouble of spine, but found, on examination, that the patient was an example of a rare form of abnormality, viz: the transposition of the thoracic and abdominal viscera. If the members of the Academy will severally examine the boy they will find his heart beating within the nipple below the fifth rib on the right side, the dullness of the liver in the left hypochondriac region, and a tympanitic resonance over the region usually occupied by the liver on the right side. There are no indications of pulmonary nor cardiac disease, though the child is evidently anæmic.

The patient was carefully examined by the gentlemen present, and the diagnosis confirmed.

PARALYTIC AFFECTION OCCURRING IN TWO BROTHERS.

Dr. McGraw—I have to present before you a patient whose brother recently died from paralysis of the lower extremities, and some of the muscles of the throat and eyes.

I bring this patient before you because it seemed to me that it might be interesting to study the nature of a disease which has singled out two brothers from a healthy family, and which we have no grounds for believing to be of a contagious nature. My professional connection with the family began September 21st, 1869, when I was called to see the elder brother, Mr. I. V. B. He was a Jew, thirty years of age, and a dealer in second-hand clothing. He was one of four brothers, one of whom is the patient whom you see. The father, mother, remaining brothers and blood connections, are, and have been, as far as can be determined, healthy people. He, himself, admitted that he had had gonorrhœa seven years ago, but denied having ever observed any evidences of other venereal disease. He had, in August, been traveling in the country and was then exposed to some hardships. He came home about the first of September and sent for a homœopathic physician on account of an attack of chill fever(?). The chills ceased under the treatment, but he felt his legs growing weaker, and finally lost the use of them entirely.

On visiting him on September 21st, I found him suffering considerable pain in the right iliac region, in the outer part of his thighs and in the calves of his legs. The bowels were constipated, urination was difficult and caused a burning pain in the glans penis. He had a complete paralysis of motion and partial of sensation, in both lower extremities. The right leg, however, seemed to suffer more severely than the left. Pressure over the bowels and on the outside of the thighs caused acute pain. There were no vertebræ which seemed to be the seat of pain. The upper extremities and head did not show any evidences of disease at the time of my first visit. Under treatment, the patient grew better. His bowels became regular, his water passed more easily, and in the course of two months he gained in strength so that he was at last able to walk with the aid of a stick. The treatment consisted in, first, purgatives, afterwards large doses of iodide of potassium. I regarded the disease, as did also several gentlemen who saw the patient with me, as one of an inflammatory character, and I gave the iodide with the view of causing absorption of any existing effusion. His improvement was but temporary.

On December 20th I was called to see him. He had fallen suddenly, whether from epileptic seizure or from a mere attack of faintness, I have no means of determining. Afterwards, he had one or two such attacks, and finally began to complain of dizziness and headache. His eyes, at this time, became crossed to a very marked degree, and Dr. Noyes, who kindly examined them for me, found the external rectus of the left eye paralyzed.

From the time of his fainting, he grew rapidly worse. His headache became more intense and unremitting. He began to complain of difficulty in swallowing, and finally died of pulmonary congestion of a passive nature. I believe that his lung trouble was a result of paralysis of the pneumogastric nerve. The pupils reacted to the light equally to the day of his death, and he continued to keep the strength which he had regained in his lower extremities, but his bowels became again very constipated. He died on January 8th. I examined his urine at several different times and never discovered any albumen. A *post-mortem* was refused on religious grounds, and I am still at a loss to account for the pathology of the case.

About the first of December the younger brother, A. V. B., began also to complain of weakness of the lower extremities. He and the elder brother had been in business together at No. —, Michigan avenue. Otherwise had nothing in common which was not also in common with the other *healthy* members of the family. He had had gonorrhœa and ulcers on the penis three years before, and had had some falling out of the hair. One of the glands of the neck was the seat of suppurative inflammation three months ago, and is still discharging pus. He has had no chills, no pain anywhere, nor has he lost appetite or flesh. He has some difficulty in passing water; has had a burning sensation in the glans penis when micturating, and has twice passed water involuntarily. He can still, as you see, totter about, dragging his feet after him, but he seems to me to be getting worse. I have given him Donovan's solution, but have lately changed his medicine, and he is now taking iodide of potassium.

The peculiar feature in these two cases is, that the two brothers have been attacked in nearly the same way.

The first idea that would occur, in seeking an explanation of the fact, would be that they had both been exposed to the action of some poison, either of syphilitic or malarial, or possibly, of a mineral nature. There are difficulties in the way of any and every explanation. Syphilis would seem to be excluded, because the elder brother never, at any time, showed symptoms of the disease. He was a married man with a healthy wife and two healthy children, the youngest of whom is still at the breast. Neither have the symptoms exhibited by the younger brother made it certain that he has been constitutionally infected; besides, as Drs. Inglis and Cleland, who saw the two patients with me, remarked, syphilitic paralysis is one of the rarer forms of the disease, and we would hardly expect to find it manifesting itself simultaneously in two brothers who exhibited in their present condition no other mark of its presence. I have strongly suspected that either the house in which they conducted their business together had some element generative of disease within it, or that some old clothing, or other material which has passed through their hands, may have been the agent of their common misfortune.

I shall be glad to have all present give their opinion about the nature of the disease. I will also remark that the patient is anxious to have his case thoroughly investigated.

Dr. Thom—I think the trouble is entirely constitutional, that there is no organic lesion, and I should recommend, for treatment, iron, with counter-irritation to the spine.

Dr. Gilbert—I am of the same opinion with regard to the cause of the disease, and would recommend the phosphates in combination with strychnia.

Dr. Lyster—I think the trouble is intercranial, and that the symptoms resemble those of progressive locomotor ataxia. In this disease, the patient sometimes apparently gets better, the power of coördination improving so that at times he is able to attend to his business. Trousseau reports two cases affected with this disease for years, that improved for one year, grew worse again, and finally died. I would recommend the treatment as indicated by Dr. Gilbert.

Dr. Bigelow—Is this a case of paralysis? Is it not rather a want of power of coördination? I would make no change in the treatment as recommended by Drs. Gilbert and Lyster, but I would not apply counter-irritation to the spine.

Dr. Noyes—The symptoms in this case resemble those of his brother. I examined his brother's eyes, and found that there was paralysis of the sixth intercranial nerve with diplopia. The symptoms in both are similar, and resemble those found in progressive locomotor ataxia. I find, in examining this man's eyes, that there is a slight difference in the size of the pupils. The ætiology of this disease is not clear. For treatment I would give phosphorus combined with other nerve tonics.

Dr. Duffield—I think that this man's trouble results from depressed vitality, induced by his mode of life. I think that the trouble has its origin in the cerebellum. In the treatment I should trust to the stomach, giving good, generous diet, and as much cod liver oil as he is capable of bearing.

Dr. Andrews—I think the lesion is lower down than the brain. The man's trouble, as indicated by the symptoms, is all below the middle of the body. It is true, that on protruding the tongue it deviated slightly to the right side; yet this is of common occurrence in perfectly healthy people. It is probably some form of degeneration of the anterior columns of the cord. This degeneration may result from an anæmic condition of those parts. There appears to me to be no progression of the symptoms upwards in this man's case.

Dr. Jenks—I had a case two years ago that I diagnosticated as progressive locomotor ataxia; he could not walk without keeping his eyes on his feet; the disease progressed in severity, and a short time ago when I saw him he was just able to be about. His trouble resulted, undoubtedly, from excessive venery.

Dr. Duffield—I think there is a tendency to nervous diseases in the Jewish people.

Dr. Lyster read a paper on the æsthetic treatment of hare-lip.

Dr. McGraw moved a vote of thanks be tendered Dr. Lyster for his interesting and valuable paper.

Dr. McGraw—I do not approve of closing the fissure in the hard palate by plates; they are more or less bungling; they often, by their pressure, cause absorption of the bone, enlarging the opening and increasing the difficulty. Prof. Langenbeck, of Berlin, operates by dissecting up the periosteum on each side of the fissure, carrying the incision back to the back part of the hard palate, and far enough forward so as to form two flaps, which are brought together by sutures in the centre. New bone is thrown out from the periosteum in its new position, effectually closing up the fissure. I have seen him operate in this way a great many times, and all of his operations for this deformity were successful. Patients, after this operation, have to learn again to talk.

Dr. Noyes—I regard it of the first importance that the operation be contrived with a view to saving and using all the soft parts. We thus remedy the disagreeable depression or notching which too frequently remains on the free border of the median line after the operation of hare-lip. To accomplish this most effectually the operation must necessarily vary according to the nature of the deformity. The operation which most perfectly fulfilled these indications in forming a natural vermilion border to the lip is the best. These indications seem to be met in an admirable manner by the operation described in the paper which has just been read.

I have frequently seen Prof. Langenbeck operate while in Berlin, and upon my return home carried out his method with success in a very bad case of double hare-lip and cleft palate. The patient was a healthy boy five years old. In this case the intermaxillary bone projected so much that I was obliged to cut off the projecting portion with the bone cutters. I am in favor of operating early in cases of congenital hare-lip, even as early as the third week.

Selections.

THE SUM AND SUBSTANCE OF ANTISEPTIC SURGERY.

By E. Andrews, M. D., Prof. of Surgery in Chicago Medical College.

THERE are many practitioners whose time and opportunities have not enabled them to give carbolic acid, and its kindred agents, either a careful trial or full investigation by reading, and who, consequently, do not know how much is truth and how much is error in what is said on the subject. This article is intended to supply a want by making a condensed statement of this part of surgery. First, then,

WHAT WILL CARBOLIC ACID ACCOMPLISH?

Carbolic acid, creosote, sulphurous acid, permanganate of potash, and all the other poisons, which destroy animalcular life, without too much irritation to human tissues, act in the same manner, and produce similar results. Carbolic acid being most used, is, however, here taken as a type.

1. In compound fractures of the most aggravated character, it prevents almost absolutely all suppuration, and most of the soreness and swelling, causing large lacerated openings to go through their process of healing without any unpleasant smell, and often without the formation of a spoonful of pus.
2. Lacerations and compound fractures laying open large joints, such as the knee, are often healed by it without suppuration, and without exhaustion. Lacerated flesh wounds follow the same law.
3. Lumbar abscesses, and other large collections of pus, opened under a carbolic acid covering, close again by first intention, and after the pus is evacuated, the cavity ceases to produce any more,

secreting only a clear bland serum. Meanwhile, the patient, instead of falling into hectic in the usual manner, grows fat and strong, and ultimately recovers.

4. Fistulas communicating with carious bone, may be often healed permanently, without operation, the suppuration ceasing, and the granulations first firmly inclosing the dead bony spicula, and then effecting their removal by absorption. This is, perhaps, the most surprising of the effects of carbolic acid.

5. In surgical operations it may be used to promote union by first intention, and to prevent erysipilas, pyæmia, and other septic forms of disease.

WHAT IT IS.

Carbolic acid (formerly called phenic acid) is a hydrocarbon obtained from coal tar. It can scarcely be termed a true acid, its acid properties being almost nothing. It more properly belongs to the class of alcohols. When pure it crystallizes. It coagulates albumen, and acts as a slight caustic on the tissues, being in that respect rather feebler than nitrate of silver.

DIFFERENT FORMS.

When the crystals are mixed with 5 per cent of water, they deliquesce and form a permanent fluid. If more water be added, it will not mix, but floats on the top, taking up into solution only 5 per cent of the acid. If the two solutions are shaken together, they soon separate again, the lower one containing 95 per cent of the crystallized acid, and the upper about 5 per cent. The upper solution is the one generally to be used for injecting abscesses, etc., the lower one being too strong. There are no officinal names for distinguishing these three forms of the medicine, and hence the manufacturers give them all sorts of titles. The only reliable way at present is to buy the crystals, and prepare the solutions by adding water.

THE THEORY OF ITS ACTION.

The atmospheric air always contains, floating as dust in it, a great number of vegetable and animalcular germs, which light upon exposed organic fluids, and multiplying by millions hourly, convert the organic material into a putrifying mass. If the germs be wholly excluded, it is found that putrefaction does not occur, even though warmth and moisture both are present.

Prof. Lister maintains that these putrefacient animalcules are the cause of putridity and irritation, and that the irritation causes the suppuration, and hence, that when no other strong cause of irritation is present, the affusion of pus from any raw tissue may be wholly prevented by simply applying carbolic acid, and killing all the animalcules, and preventing the access of any new ones.

HOW TO USE IT.

Prof. Lister uses rather complex methods, which can, by no means, be carried out easily by American surgeons, outside of the large cities. During the past year, I have devised various ways of simplifying the applications, with excellent success; and I am glad to see by late European advices that he himself is now resorting to some of the identical modes which I had planned independently.

I have found the following three preparations the most convenient:—First, take about one ounce of the crytals, or of the 95 per cent solution, which is nearly as strong, and agitate it in a bottle, with 10 or 15 ounces of water; allow it to settle a few minutes, and the clear 5 per cent solution will appear at the top, and the surplus of acid will settle to the bottom, in the form of the 95 per cent solution. Also, take about one ounce of the crystals, or of the 95 per cent solution, and dissolve it in 8 ounces of any oil. The best is a pure quality of castor oil, both because it has more viscidity, and is, therefore, better for dressings, and because it will dissolve the 95 per cent solution of the acid completely, making a perfectly bright, clear compound, which is elegant in its appearance. Other oils precipitate the 5 per cent of water, in the form of an emulsion, which gives them a dull look. Finally, take eight parts of collodion, and mix them with one part of carbolic acid. We are now armed with three preparations, viz: the carbolated water (5 per cent solution), the carbolated oil, and the carbolated collodion, and are prepared for action.

TREATMENT OF COMPOUND FRACTURES.

The fracture being adjusted and splints applied, the wound should be washed to its remotest corner, with the 5 per cent solution, using a syringe, if necessary, to throw it fully into deep parts. This will kill all the animalcular germs present in the wound. The next step is to prevent the admission of any more. For this purpose, take a pledget of lint or cotton batting, dipped in carbolated oil, large enough to fill the wound, if it is open, or to more than cover the orifice if closed, and lay it in or on, as the case may be. If elegance is sought after, a piece of tinfoil or oiled silk may be placed over the lint, to prevent the oil from soiling the outside dressing. Finally, confine the whole in place with a roller, or with a Mayor's handkerchief. The next day, the injection and dressing must be gently repeated. It should be observed, that new wounds and freshly opened abscesses, whose raw nerves are not yet covered with granulations, often feel the smart of the first wash severely. If so, the second wash may be reduced to one-third strength, gradually increasing again to 5 per cent. Under this treatment, frequently there is not an ounce of pus secreted during the whole cure, and the bone often unites as promptly as in a simple fracture—an important gain, as we all know how prone compound fractures are to slow union.

LUMBAR AND OTHER LARGE ABSCESSES.

These large collections of pus which often destroy the patient soon after they are opened, may generally be rendered surprisingly harmless in the following manner:—Dip a trochar in carbolated water, and thrust it obliquely into the abscess, so as to make a valvular opening. Let the pus flow as long as it will, or press it gently out, but do not let a particle of air to regurgitate through the canula, as that would introduce animalcular germs. When the pus ceases to flow, dip a few fibres of cotton batting into the carbolated collodion, lay them over the point of entrance to the trochar, then placing the thumb on the end of the canula, or a cork in it, to prevent any regurgitation of air, draw it out from under the collodionized cotton, pressing the latter, instantly, upon the orifice, to prevent the admission of living germs. In this way, the orifice will be sealed, and a union, by first intention, usually obtained. After a week or more, the abscess will generally be found filled again, when it should be again tapped in the same way. The pus will now be found thinner and more serous. After a longer interval, a third tapping will find the pus almost transparent, and the fourth one often will draw absolutely transparent serum. In this way, the intervals will lengthen, and the abscess, at least, in many instances, be gradually made to wither away and disappear, the patient all the while growing fat and rosy, and presenting a total contrast to the usual results of a lumbar abscess. Sometimes the abscess is clogged with masses of dead areolar tissue, so that it is impossible to evacuate it through the canula. In this case, it may be still possible to draw them out through the tube by slender forceps, dipped before each insertion in carbolated water or oil; but if this fails, or if the collodion does not produce a union by first intention, or if it has been already opened before coming under treatment, a different method is necessary. We must now proceed by injections. For this purpose, use a 1 or 2 per cent solution the first few days, gradually increasing to 5 per cent, or 25 grs. to the ounce, as the patient becomes used to it. This must be thrown in once a day, filling the abscess completely. Then allowing the solution to run out, a large pledget of cotton, dipped in carbolated oil, must be placed over the fistula, and confined by a bandage. It will be the neater and better if a piece of druggist's tin-foil is placed between the cotton and the bandage. This dressing must be repeated daily. Frequently the flow of pus will continue, gradually diminishing for one, two, or three weeks under this treatment; but it will be almost always brought under control, and the abscess at length discharge only a little transparent serum, without any odor. This may continue many months, but the patient is saved from hectic, grows fat and vigorous, and his life is commonly saved.

CARIOUS JOINTS.

Prof. Lister claims that carbolic acid will heal up a fistula over necrosed bone, and cause its absorption. In my own practice, I have been able to do this, where the sequestrum was of cancellar tissue, or a fragment of compact tissue of small size; but large fragments of compact bone, two or three inches long, have, in my hands, resisted the treatment, and required operation. The principle appears to be this:—Cancellar bone, if suppuration be suppressed by the injections, becomes permeated with the granulations which hug close to all the little spiculæ, and being in absolute contact, effect their absorption; but large compact fragments cannot be thus interpenetrated with living granulations, and hence their absorption, if accomplished at all, would, probably, be too slow to be waited for. At any rate, such is my experience up to the present time. The smaller joints do admirably under the daily carbolated injections and dressings. I have repeatedly healed them up in a complete and permanent manner, after the probe showed the articular surfaces of the bones to be thoroughly carious. Anchylosis, of course, occurs. Finger-joints may be often healed in two weeks, but larger ones require much more time. I have an elbow whose articular surfaces were perfectly carious six months ago; the limb was swollen and red, discharging large quantities of stinking pus, and the patient was emaciated, cadaverous, and hectic. Under the antiseptic dressings, he has grown plump and vigorous, the swelling has all disappeared, and the skin resumed its natural whiteness. For three months, I have been unable to find any dead bone with the probe, and there is no discharge of pus, yet the fistulas are still permeable to the probe, and probably will not close under several months more.

Wounded and carious knee-joints can often be treated with splendid success in the same way, compared with the disasters which used to follow these conditions. I have one now on hand which does not discharge a teaspoonful of pus in a week, and the patient will save both his life and his limb. I have seen one compound fracture, penetrating the knee, thus treated, where the joint did not even inflame, and was not anchylosed. Some carious knees, however, are too extensively diseased to admit of final cure, and the antiseptic treatment is only useful to arrest exhaustion, and enable the surgeon to get them up to a condition vigorous enough to bear an operation. The abscesses of hip-disease often respond admirably to the same treatment.

INCISED WOUNDS.

Wash the wound thoroughly to its remotest recesses with the carbolated water, then close it with sutures, and add adhesive straps or carbolated collodion. If the straps are used, a pledget of lint, dipped in carbolated oil, should be laid over the wound and covered with tin-foil and bandages. In this way, union by first intention is greatly promoted, and the risk of erysipelas almost absolutely annihilated.

If any one, however, supposes that carbolic acid is infallible, he will be disappointed. Many particular cases occur where it partly fails of its end. In these instances, it will often be found that a solution of one part of the officinal sulphurous acid to two parts of water does better. Solutions of permanganate of potash, two grains to the ounce, sometimes do well; and, in the same manner, other antiseptic solutions, if used in sufficient strength, occasionally succeed. Many persons miss entirely the effects of the antiseptic treatment, because they are inefficient in its application. If they do not effectually destroy every animalcule in the abscess or wound, and absolutely bar out the access of every new germ in the living state, they accomplish nothing. The washing and injection must be thorough, and the carbolated outside dressings must cover the whole orifice and its vicinity. When these principles are observed the success is wonderful.

On the whole, it must be acknowledged, that the use of carbolic acid has revolutionized certain branches of surgery, and enables us to save many limbs and lives which would formerly have been lost. I would advise no one to make a hobby of it, but that it is a remarkable addition to the resources of our art is a fixed and undeniable fact.—*Chicago Medical Examiner.*

IODOFORM AND IRON AS A REMEDY IN SCROFULA, CHRONIC ULCERATIONS, ETC.

By T. Jeff. Boyer, M. D., Clearfield, Pa.

About two years ago my attention was attracted to an article published in the proceedings of the State Medical Society, relative to a remarkable cure, effected by Warner's Iodoform and Iron Pills. Since then I have used them in my practice, prescribing them in all cases of chronic ulceration with excellent results. In one or two old cases in which all the usual remedies of the materia medica had been used without any good results the use of these pills produced rapid improvement, pain disappearing, granulations becoming abundant and healthy, and sores healing up, leaving the patients in excellent health. I have faith in their curing almost any case of ulceration. A young friend of mine here was operated on by Dr. Agnew, of Philadelphia, for *necrosis* with great success, the wounds healing rapidly while the patient followed the advice of the doctor, but becoming careless, and after exposing himself to cold, and in several cases accidentally bruising the leg, an apparently new inflammation was set up. The bone commenced to thicken, and finally presented a rough, spongy appearance. During this time, by the advice of his physician, the old dressing was applied, and such constitutional treatment instituted as the nature of the case suggested, but no improvement manifested itself, the sore remaining stationary and painful, and after nine months of apparent useless efforts, the young man came to me, almost despairing. I hemmed up the edges of the sores, applied a weak solution of carbolic acid to them, ordered a simple dressing of citrine ointment and simple cerate, and gave the patient sixty *Iodoform et Ferri* pills, ordering him to take one, two or three, alternating doses, as he pleased, so that he would take five or six pills a day. The improvement was rapid; he gained flesh in an astonishing degree; absorption in the bone was very marked; the sore closed up, and, at the end of ten days, when the pills were taken, the surface, which had extended two inches ten days before, was now less than one inch. I ordered him one hundred of these pills, to continue treatment as before. The young man is now enjoying vigorous health; his leg is healed, free from pain, and he feels grateful, and says he never felt better.

I have on several occasions in scrofulous cases with hereditary lung taints, prescribed this remedy, and am satisfied that it has, at least for the time being, arrested the disease. In incipient phthisis, I believe these pills should be tried.

I might give you a more definite statement of the effects of these pills, and cite several cases, but fear this article is already more than you wish to read, but think it may be of some interest to know my experience with this truly valuable agent. I offer it for what it is worth, and trust you may have the same success, should you have occasion to try it.—*Medical and Surgical Reporter.*

MUSCULAR LABOR OF THE UTERUS IN PARTURITION.

The Obstetrical Society of Dublin were the auditors, on Saturday evening last, of a most interesting and masterly communication on this subject from Professor Haughton, F. R. S., of which, not only were the details of the scientific investigation of the greatest interest, but the results obtained were of the highest practical value. The investigations were undertaken by Professor Haughton as part of the inquiry which he is about giving to the public in a work on Animal Mechanics. He applied himself to the testing of the relative mechanical power of the involuntary or uterine and voluntary or abdominal muscular system engaged in parturition; and by a variety of experiments and mathematical calculations, by ascertaining the weight of the muscles engaged, he has arrived at results which will, doubtless, astonish our readers.

He showed, with conclusiveness, that the expulsive force of the uterus, employed in dilating the os in the first stage of labor, amounted to ¾ lbs. on the square inch; and he compared this result with the conclusion arrived at by Dr. Matthews Duncan, that the membranes required a force of 3.1 lbs. on the square inch for their rupture. Thus, he pointed out that the expulsive power of the uterus was just capable of rupturing the membranes and no more, and he illustrated by this comparison the beautiful and wonderful economy of labor evidenced in the human system. He found, however, that the expulsive force capable of being voluntarily exerted by the woman was enormously greater than that of the uterus, and was equivalent to 38.6 lbs. on the square inch, and he believed that it was by this force in the greatest measure that the expulsion of the fœtus was effected. He reduced his investigation to the following figures:

Involuntary, or uterine force,	**3.4**	**lbs. on square inch.**
Voluntary, or abdominal force,	**38.6**	**" "**
Maximum expulsive power.	**42**	**" "**

Which, calculating the fœtal head to have a diameter of 4½ inches, would represent the enormous force of 593, or about a quarter of a ton, which *might* be engaged in parturition. He, of course, was aware that only a small proportion of this power was usually exerted.

The obvious practical bearing of this investigation on the use of chloroform in labor was pointed out by Professor Haughton; and he suggested that while it might be found useful in the very earliest part of each expulsive effort, from its temporary power of stimulating muscular action, its use afterwards was obviously injudicious, inasmuch as it paralyzed the voluntary power, on which the process of parturition so much depended.—*Medical Press and Circular.*

THE DIAGNOSTIC VALUE OF ACCENTUATION OF THE SECOND SOUND OF THE HEART.

By J. Milner Fothergill, M.D.

Assuming that the second sound of the heart is chiefly due to closure of the semilunar valves, when arresting the backward flow of the blood-column on the arterial recoil, it is manifest that variations in the amount of pressure, increase of arterial elasticity, or want of it, the amount of obstruction to the flow forward, will entail changes in the sound produced, as well as that an altered condition of the valves themselves may alter the character of the sounds. Vegetations on the free edges of the valves will muffle the sound, or occasionally produce a "clanging" sound (Walsh, Fuller); while great thinness makes the sound ringing. The more ordinary variations, however, are due to variations in the pressure of the blood-column above the valves. In health the sound of the aortic valves, as heard at the junction of the sternum and second right costal cartilage, is the louder and more distinct, from the greater size of the aorta, and consequent greater blood-column and stronger recoil; and can be distinguished from the sound of the pulmonary valves at the second left costal cartilage (Da Costa), or still more clearly at the third left costal cartilage (W. T. Gairdner). The alterations of sound from the aortic valves are not so marked; partly from their being more deeply seated, and partly from the systemic circulation being seldom so impeded in all its parts as to produce sufficient increased pressure to alter the sound of the aortic sigmoid valves. The pressure of a tumor or aneurism of the ascending aorta could almost alone produce such pressure. It is with regard to the more superficial pulmonary sigmoid valves and their sound that we are chiefly diagnostically interested. Skoda has shown how mitral lesions, either regurgitant or obstructive, lead to pulmonary congestion and altered blood vessels: the pulmonary artery becomes dilated and thickened, and recoils with increased energy, and by increasing the pressure on the pulmonary semilunar valves, increases and intensifies the sound. He draws attention to this, along with hypertrophy of the right ventricle, as a means of determining the exact seat of a systolic murmur of the left side; but states that the conclusion, that it is due to disease of the left side, must not be drawn till the other causes of this condition be eliminated. Mitral disease frequently exists, however, where no perceptible loudness of the second sound can be detected; and an accentuation of the second sound may be found when there is no evidence of mitral disease, either from auscultation or from the pulse. Accentuation of the second sound may be only temporary, which cannot be the case with mitral lesions, whether obstructive or regurgitant. (Temporary mitral regurgitation may arise from irregular action of the papillary muscles; but of this we do not yet know enough to hazard assertions.) It will be found in all cases of pulmonary congestion, however produced, and is usually accompanied by increased dullness on percussion; shortness of breath, amounting to a dyspnœa on exertion, and also by evidence of a laboring right ventricle. There is often bronchial expectoration also, probably due to effusion from the distended pulmonary vessels. In these conditions the "click" of the pulmonary sigmoid valves may be so intensified as to become a "snap," and to produce a positively jarring sound on the ear of the auscultator. A few leeches placed over the roots of the lungs occasionally; hot poultices, faced with mustard, applied to the front and back of the chest at bedtime; rest, and general and special tonics to obtain an improvement in the ventricular contractions, will be found to relieve the general condition; and that improvement will be accompanied by a decrease in the accentuation of the second sound, until relief of the chest symptoms and a normal sound are attained. At first sight it seems difficult to account for any improvement from acting on the ventricles by general and special tonics, as assuredly is the case. In these conditions the right ventricle is distended, and where the pressure is long-continued, becomes dilated. At each ventricular contraction a greater volume of blood is thrown into the pulmonary artery, and thus an increased arterial recoil follows. The exhibition of general and special tonics, along with the relief afforded by the local measures, assists the ventricle to return to its normal condition and of a reduction of the ventricular cavity to its ordinary capacity. That this is possible even in a condition so advanced as dilatation seems probable. "In many instances I have known the physical signs of dilatation improve materially, and the general symptoms almost wholly disappear, after a course of iron has been steadily persisted in for three or four years." (Fuller.)

In proportion, then, as we find the second sound the more acute and loud, so we may suspect a greater degree of pulmonary congestion or obstruction. In chronic pulmonary disease, and in disease of the left side of the heart, accentuation of the second sound is a valuable index of the condition of the pulmonary circulation and of the patient's necessities in the way of treatment. Cardiac asthma, so-called, is really dyspnœa from pulmonary engorgement—a disturbance of the balance between the pulmonic and systemic circulations; and varies from a mere shortness of breath to an intensity which threatens immediate death. Intensified second sound is a clear indication that the disturbance of the balance is persisting, and in its wake follow lesions certainly destructive to life. A restoration of that balance is most desirable, and, when attained, is accompanied by relief to the rational symptoms as well as to the physical signs.

Accentuation of the second sound is, then, usually the result of congestion or dilatation of the pulmonary vessels, and accompanies these conditions, whether temporary or permanent, and may be found without valvular disease of the left side; as may valvular disease of the left side of the heart exist without it, if the balance of the circulations be not much disturbed, and the lesion in the apparatus for arresting the backward flow of the blood—*i.e.*, the insufficiency of the auriculo-ventricular valves—be not very pronounced. In regurgitation, this sign, taken in connection with the loudness of the murmur, may furnish a clue to the amount of regurgitation; as to whether the loudness of the murmur be due to a large backward flow, or to a roughened condition of the free edges of the valves. In constriction, it may assist to determine whether the murmur is due more to obstruction or vegetations. In valvular disease of the left side of the heart, accentuation of the pulmonary second sound is an index that mischief is going on behind the lesion, and that destructive changes highly inimical to life are looming. Finally, accentuation of the second sound is usually found related to the pulmonary semilunar valves, and, when so related, is an index that the balance between the pulmonic and systemic circulation is disturbed.—*The London Lancet.*

ON MUSCARIN, THE POISONOUS ALKALOID OF THE AGARICUS MUSCARIUS.

A REMARKABLE essay has just been published by MM. Schmiedeberg and Koppe on Muscarin, the poisonous alkaloid of a certain fungus, called the Agaricus muscarius, or Amanita muscaria; the properties of which have long been known in connection with the curious but not very pleasant story told by Pereira, on the authority of Langsdorf, of its use for the purpose of producing intoxication, amongst the Russian peasants. The alkaloid was obtained, as we learn from an abstract contained in the *Centralblatt*, principally from the specimens of this species growing around Dorpat, though it seems probable that it is not limited to this species alone. It is procured by means of a somewhat complicated process through the agency of alcohol, with the addition of acetate of lead and ammonia, which leaves the alkaloid in solution, whence, after acidification with sulphuric acid, it is precipitated with iodide of potassium and mercury, or potassium-bismuth-iodide. When freed from the latter salts, it appears as a strongly alkaline hygroscopic mass, destitute of taste and smell, drying when evaporated over sulphuric acid into crystalline laminæ, easily soluble in alcohol and water, soluble with difficulty in chloroform, and not at all in ether. It burns without subliming at a temperature of 100° C., giving off an odor feebly resembling tobacco. The proportion of the alkaloid contained in the agaric is very small, not exceeding ten or twelve grains in two pounds of the fresh fungus. As regards its physiological properties, they appear closely to resemble those of the Calabar bean, and, like this, to be antagonistic to atropine. It acts with remarkable energy on cats, a very small quantity injected subcutaneously producing an abundant flow of saliva and of tears, vomiting, diminution of the frequency of the pulse, and such extraordinary contraction of the pupil that this only appeared as a narrow black slit. Subsequently dyspnœa and debility of the muscular energy supervened, amounting at length to paralysis. Before death the pupil became widely dilated; and the fatal issue resulted from arrest of the respiration, the heart continuing for some time to contract feebly. Larger doses were required to kill dogs and rabbits, and no contraction of the pupil occurred in the latter. The influence of muscarin on the heart was carefully noted in frogs. The subcutaneous injection of the one-tenth of a milligramme caused retardation of the heart's action by prolonging the diastole; the auricle, and then the ventricle, after a few minutes, ceasing to act. For several hours, however, the slightest touch of the ventricle induced a single powerful contraction, showing that the motor apparatus was not paralyzed. Section of the vagi caused no variation in the phenomena, and hence the authors were led to refer the phenomena to a persistent excitation of the inhibitory apparatus situated in the heart itself, and the correctness of this view was established by the following control-experiment: Von Bezold and others have shown that atropine paralyzes the inhibitory apparatus situated in the heart of mammals, and Schmiedeberg has proved in that of frogs also. Now, it is worthy of notice that a dose of atropine will completely remove the influence of muscarin; so that if the heart of a frog has been quiescent for hours, providing its irritability is retained, it begins again to pulsate and to acquire its former activity if a dose of atropine be injected, whilst, inversely, muscarin exerts no influence on an atropinized frog. A similar antagonism exists between muscarin and atropine in regard to the heart of mammals.

In animals poisoned with muscarin the blood-pressure sinks almost immediately to one-third of its normal amount. To this primary and principal depression a period succeeds during which it slightly rises again. The prodigious fall in the first instance is probably due, not simply to retardation of the pulse, but to a sudden loss of tone in the vessels—a loss which is rendered evident in rabbits by dilatation of the vessels of the ears. After the injection of atropine, the blood-pressure recovers itself again, and considerably exceeds the normal amount, probably on account of the complete abolition of the influence of the pneumogastrics. The action of muscarin is very energetic on the abdominal organs; and here, again, resembles that of the Calabar bean, the intestines, bladder, and even the spleen becoming, as it were, tetanically contracted. The intestines first become converted into a hard, white cord, and then, becoming somewhat relaxed, exhibit vigorous but irregular peristaltic movements. The effect does not occur if by compression of the aorta the adit of blood to the intestines is prevented. Here, also, atropine presented distinctly its antagonistic action. The sialogogue influence of muscarin was always that which was first exhibited, and in all animals alike, whatever their sensitiveness to the poison might otherwise be. The effect on the pupil appears to be but slow in man, and to produce it a considerable dose is required.—*London Lancet.*

THE extract of calabar bean, when instilled into the eye, produces contraction of the pupil, but when injected hypodermically it produces dilatation of the pupil.

Pharmacy.

EPSOM SALT.—In reply to a query propounded by the American Pharmaceutical Association, in regard to the best method of disguising the bitter and disagreeable taste of epsom salt, Mr. Isaac W. Smith, of Philadelphia, suggests the following:

℞. Rad. glycyrrhizæ cont. (deprived of outer bark)	℥iv
Aq. bullient	Oij vel q. s.

Mix and allow to stand, with occasional stirring, until cold; then express through muslin, adding more water, if necessary, until the residue no longer tastes; then filter, and to the filtrate add magnesiæ sulphatis ℥iv; finally, evaporate to dryness over a water bath. Each ounce of the compound represents about one ounce of the crystallized salt.

OXALATE OF IRON.—This preparation was recommended some years since by Dr. Schaeffer, of Washington, as a valuable chalybeate, and has been recently attracting some attention. It is claimed for it that it combines advantages possessed by several of the best ferruginous preparations in use, while it is at the same time free from the objectionable features generally associated with these advantages. Thus, while it contains iron in its most efficient state as protoxide, it is not liable, like the other proto-salts of iron, to become peroxydized under ordinary conditions. Its lack of the unpleasant, inky taste peculiar to most of the proto-salts of iron, and of the astringency and the irritant properties common to most of the soluble chalybeates; the smallness of the dose as compared with the milder preparations, such as the ammonio-citrate or the potassio-tartrate, and the readiness with which it is assimilated, are further recommendations. For general efficiency, it can be compared only with Quevenne's iron, and it posseses some advantages even over that excellent preparation, being far more attractive to the eye, and dissolving in the stomach without evolution of gas.

The process for preparing the oxalate, as given by Dr. Schaeffer, is as follows;

℞. Acidi oxalici.................................. ℥j.
Ferri sulphatis.................................. ℥ij.
Aq. bullientis ....f℥x.

Dissolve the acid in six fluid ounces of the water while hot, and filter; dissolve the iron in the remainder of the water, adding, if necessary, sulphuric acid, q. s., for solution; heat the solutions separately and pour them together whilst hot. The oxalate falls as a precipitate, which must be allowed to settle. Then decant the supernatant liquid; place the precipitate on a filter and wash repeatedly till there be no trace of acid; finally, dry by a moderate heat. Vogel, who first suggested this method of preparing the oxalate, has pointed out the fact that a notable loss is sustained from the solubility of the oxalate in the sulphuric acid set free during the process, and he therefore recommends to immerse metallic iron in the filtered solution, whereby the whole of the oxalate is recovered, while the original quantity of ferrous sulphate is restored. The dose of the oxalate corresponding to one grain of metallic iron, is two and one half grains.

Mineral Waters—The St. Louis "Magnetic" Spring.—The use of natural mineral waters for their curative effects in disease, is rapidly growing in popularity in this country. In Europe the comparative merits of the various mineral springs that have acquired notoriety, have been carefully studied by scientific men. Analyses of their waters have been carefully made, and the immediate effects upon the system, both in disease and in health, have been carefully observed. Physicians are thus enabled to prescribe Vichy, or Seltzer, or Congress, quite as rationally as they do quinine or chlorate of potash. Doubtless many springs exist in the United States, whose waters possess healing virtues hitherto unsuspected, and many more which possess already a local repute deserve to be more widely known. That an increasing interest is taken in this subject by the public, is proved by the frequency with which the services of the chemist are sought to analyze specimens of water suspected to possess medicinal virtues. The chemist is not unfrequently able to decide the matter without any very extended investigation, as in a case related to us on the best authority as occurring in this city a few days ago. A man brought in from the country a small bottle of water, wishing to know what it would cost to have it analyzed. On questioning him as to what there was in the water that had especially attracted his attention, he replied, after some hesitation, that "his old woman said it was the best water she ever see *for raising bread.*"

Last summer a company boring for salt at St. Louis, Gratiot Co., in this State, struck a mineral spring, which soon acquired a wide reputation in the cure of chronic rheumatism and paralysis. An analysis of the water was made by Prof. S. P. Duffield, the results of which we subjoin.

Analysis of water from the St. Louis well, calculated, in grains, on the imperial gallon. Temperature of water, 50° F. Specific gravity, 1.011:

Sulphate lime	66.50
Silicate lime	6.72
Chlorine, a trace.	
Bi-carbonate soda	106.40
" lime	69.40
" magnesia	17.50
" iron	1.20
Silica, free	2.88
Organic matter and loss	2.00
Total solid constituents	272.60
Bi-carbonates	194.62
Free carbonic acid in gallon, (cub. in.)	6.21
Sulphureted hydrogen, traces.	
Total mineral matter in one gallon	270.60

The following are the different materials passed through in boring the well: 40 feet clay and gravel, with occasional boulders; 30 feet blue clay; 13 feet fire clay; 39 feet sand and gravel; 15 feet shale, running into blue shale; 55 feet coarse sand and gravel; 6 feet small stones; 2 feet rock. Total, 200 feet.

Diameter, 3½ inches; delivers 280 gallons per minute.

In regard to the medicinal qualities of the spring, Prof. Duffield says:

"Before making any report on the medicinal properties of the spring, I would call attention to the fact of the current of electricity or magnetism (time and experience must develop which) that the stream of water carries. How much this will contribute to its efficacy can be only proven by experience. In the hands of the observing practitioner, I have no doubt that it will be found of value in the treatment of paralytic cases.

"As regards the *rationale* of this magnetic state of the spring I candidly admit I am not able to give a solution, which would probably, in future years, be either satisfactory to myself or physicists at large. I therefore would advise full and free investigation, which may explain what now seems an enigma.

"Looking at its chemical composition, its per centage of the bi-carbonates of soda, magnesia and lime, will make it valuable in kidney difficulty and in those diseases which require treatment with alkaline carbonates, such as rheumatism in its chronic forms.

"In reporting on the medicinal virtues of the water, I have purposely avoided any reference to cases cured or supposed to have been cured by it. These will, in due course of time, be verified or rendered nugatory by sober and unbiased judgments of practitioners, and to them this whole matter should be left. Based on its chemical constitution, I regard it valuable chiefly in kidney disorders, especially those of the uric acid diathesis."

Editorial.

THE earliest physicians were their own pharmacists. They culled, themselves, with observance of due ceremony, the few medicinal herbs whose virtues, fancied or real, accident had revealed and tradition preserved. To maintain the dignity of their profession, they shrouded in needless mystery the art of preparing and compounding their remedies. Their processes were complicated with all manner of superstitious rites and forms, but stripped of these, practiced doubtless merely for effect by the more intelligent, they were really of the rudest character.

Year by year, however, the list of the primitive materia medica was swelled by newly discovered remedies; the therapeutic value of each agent became a matter of closer study, engrossing much of the time and attention of the medical man; alchemy, developed into an independent art, contributed a host of new remedial agents, and commerce brought in still others from abroad. In later years, analysis revealed the active principles of many drugs, and devised processes for isolating them in their purity, enabling the physician to substitute for nauseous draughts and formidable boluses the more eligible and equally efficacious concentrated remedies at present so generally employed. The processes for preparing these last, although in some instances capable of a certain degree of simplification, are necessarily difficult and tedious; many of them, indeed, cannot be conducted economically, if even successfully, except on the large scale. By a division of labor, therefore, profitable to all parties, the manufacturing chemist and pharmacist assume the responsibility of preparing, compounding and dispensing the drugs prescribed by the physician. The physician the more cheerfully acquiesces in the arrangement, because, with the advance of medical science, a more accurate knowledge of pathology and diagnosis is exacted of him, compelling him to concentrate his faculties more and more upon those subjects. A large number of the most important drugs at present in use, come to us, also, from foreign sources, and we must therefore have still another class—importers and wholesale dealers in drugs.

A system so complex, and embracing such diverse interests, however necessitated by the demands of human progress, can scarcely be expected to work harmoniously from the first. The physician's vocation is one which can hardly fail to call into exercise every philanthropic and humanitarian impulse; not selfish gain or aggrandizement, but the relief of human suffering, and the prevention of disease and distress, are the immediate motives that appeal to him from day to day. With the pharmacist, on the contrary, this order is reversed. The motives which urge themselves upon his attention most constantly are wholly of a mercenary order. The same is still more emphatically true of the larger dealers, as well as of manufacturing chemists. The temptations to dishonest practices are stronger with them than in any other branch of manufacturing or mercantile business, because positive detection is so difficult—is in many cases, indeed, quite impossible. A reputation for honesty once established, it requires only ordinary adroitness to carry on successfully an extensive system of fraud. Nothing short of an integrity absolutely inviolable, and that fortified by a deep sense of the responsibility shared, remotely indeed, but not the less certainly, with the physician, where human life, it may be, is at stake, can place the manufacturer or vender of drugs beyond the reach of temptation.

Sweeping as this conclusion may seem, it is borne out, nevertheless, by the testimony of facts. The market is full of spurious and sophisticated drugs. Opium, from which a large part of the morphia has been extracted; ergot of uncertain—but unquestionable—age; sub-nitrate of bismuth containing twenty per cent of phosphate of lime; sulphate of magnesia cheapened by additions of common gypsum; these are familiar examples, which might be multiplied to any extent, were it necessary. The blame, for blame there must be in this matter, rests primarily on those who put upon the market falsified and deteriorated drugs. We can regard no excuse as sufficient for such deliberate and willful deception, especially when we remember what grave consequences may be the result. But there are extenuating circumstances which we must bear in mind, serving to remove a part of the responsibility and fix it in another quarter. The most important of these is the fact that genuine drugs, held at prices corresponding to their real value, find a slow sale, while the returns from an adulterated article are speedy and sure. Too often the purchaser takes up with what he knows to be an impure article. Not only professional druggists, but the large class of country doctors who are in the habit of dispensing their own medicines, practice this mistaken economy systematically. Be it through avarice, be it through ignorance, the fact remains, and furnishes the manufacturers a plausible excuse for dishonesty.

Let the broad mantle of charity cover, as far as possible, individual culpability in this matter; we must nevertheless recognize the existing evil, and ask ourselves, "Is there no remedy?"

Personally, we are disposed to take a hopeful view of the case. We draw a favorable augury especially from the multiplication of pharmaceutical societies throughout the country. It manifests, on the part of those thus associating themselves together, a disposition to assume honestly the responsibilities that attach to an essentially exalted and noble vocation, intimately related to that of the physician. The individual members of societies like these, formed for mutual protection and improvement, lose sight of the base and selfish motive for which they dare not ask the sympathy or countenance of the fraternity. The druggist and apothecary no longer place themselves on an equality with other tradesmen; they rank themselves rather with men of science, and as such assume to be governed by motives as far as possible removed from those of sordid self-interest and gain. A sentiment of professional pride and honor springs up gradually, which forms the most effectual safeguard from temptations to dishonesty and fraud. The final result must be undoubtedly the framing of a code of pharmaceutical ethics, by which each member of the fraternity places himself voluntarily under the jealous surveillance of his fellows, forfeiting his rank and position by any violation of its provisions.

There will remain always a class of unprincipled manufacturers and dealers who cannot be influenced by such motives and measures as these. Even against such we are not powerless to protect ourselves. Many of the adulterations practiced can be detected by the simplest means. The education of every physician should embrace enough of practical pharmacy to enable him to judge by physical characters at least of the quality of all the most important drugs. Those especially who dispense their own medicines should make themselves familiar with the means of distinguishing inferior and spurious articles from those which are genuine and good, and should bear in mind always that it is the poorest economy to buy cheap drugs. Powdered drugs, fluid extracts, and similar preparations, they should purchase with caution, and under the guaranty of some name quite above suspicion. A preparation, especially, found deficient in therapeutic effect should not be allowed to pass unchallenged, and patronage should be wholly withdrawn from those manufacturers whose goods are often found below the standard. Physicians, too, whose prescriptions are filled by the apothecary can judge often by appearances or taste, oftener still by the effects, of their medicines, whether or not they are of good quality, and it is a duty they owe themselves and the profession, to caution their patients distinctly against dealing with men who have once shown themselves dishonest in filling their prescriptions.

If every physician did but feel his responsibility in this matter, and would exert himself intelligently and persistently to combat so great an evil, we should hear no more proposals invoking legislation to our aid; the victory would be already won. But so long as charlatanry, in the profession as well as out of it, walks unrebuked, we fight at a disadvantage, for there are traitors in the camp. Give us physicians thoroughly honest and upright; let them be fairly educated for their most difficult and exacting profession, and they will need no legislative provisions to secure them against fraud at the hands of their lay coadjutors.

MICHIGAN STATE MEDICAL SOCIETY.

By direction of the presiding officer, Dr. R. Inglis, the Medical profession throughout the State are notified that the annual meeting of the Society will be held at Lansing, on the second Wednesday (8th) of June.

Voluntary papers are respectfully solicited from the members of the Society.

The following committees will submit reports:

On Registration of Physicians—E. W. Jenks, M. D., Chairman.

On Blood-letting—A. B. Palmer, M. D., Chairman.

On Substitutes for Blood-letting—Wm. H. DeCamp, Chairman.

On Excision of Hip Joint for Morbus Coxarius—Henry F. Lyster, M. D., Chairman.

Vesical Calculi in Michigan—D. O. Farrand, M. D., Chairman.

Births, Marriages and Deaths in Michigan for the year 1869—George E. Ranney, M. D., Chairman.

Revision of U. S. Pharmacopœia, 1869—S. P. Duffield, Ph. D., Chairman.

The subject selected for general consideraion, "The Contagiousness of Typhoid Fever," will be introduced at 3 P. M., June 8th, by Geo. W. Topping, M. D.

HENRY F. LYSTER, M. D.,
Corresponding Secretary.

(Newspapers please Notice.)

PERSONAL.

We notice with pleasure the name of Mr. Hart Kitchell among the graduates of the Buffalo Medical College, at the late Commencement. His graduating thesis upon *aphasia* elicited high commendation, and was recommended for publication. Mr. Kitchell is a son of Rev. Dr. Harvey Kitchell, late of Detroit, and now President of Middlebury College, Vermont.

OBITUARY.

We have to record, this month, the decease of Dr. M. L. Green, of Pontiac. The following resolutions in reference to the loss sustained by the profession of this State in his death, were unanimously adopted at a meeting of the Genesee County Medical Association, held in Flint on Saturday, February 5th:

Whereas, Death has removed from the medical profession of our State, one who, by his scientific and professional attainments, had in a short time made for himself an enviable distinction as a physician and surgeon,

Resolved, That we deeply deplore his loss to the profession, and tender this tribute to his memory.

Resolved, That we recognize in our late brother many of the attributes of an accomplished physician and valued friend.

Resolved, That a copy of these resolutions, signed by the officers of this Association, be forwarded to the family of the deceased, with the assurance of our heartfelt sympathy in their bereavement.

Resolved, That these resolutions be published in the papers of this city and Pontiac, also in the DETROIT REVIEW OF MEDICINE AND PHARMACY.

S. M. AXFORD,
H. C. FAIRBANKS,
H. H. BARDWELL,
Committee.

REVIEWS.

THE PHYSIOLOGY OF MAN; Designed to represent the existing state of Physiological Science as applied to the human body. By Austin Flint, Jr., M. D. New York: D. Appleton & Co. 1870. For sale by E. B. Smith, Detroit.

The third volume of this work maintains fully the high character established by the two previously issued. The present contains the consideration of the subjects of secretion, excretion, ductless glands, nutrition, animal heat, movements, voice and speech.

We have been especially interested in the author's views in regard to glycogenesis in the liver, as it is a subject which has occupied our own attention, and the views arrived at coincide with those of Prof. Flint. In a thesis written in 1862, we announced the conviction that the liver does not normally contain sugar, but that it elaborates a material, analogous to starch, which, coming in contact with the blood, is transformed into sugar; the doubtful question was whether this elaboration is constantly going on, or whether the *amidon animal* of Bernard remains as an integral part of the liver, and is only separated and transformed into sugar under extraordinary circumstances. The experiments detailed by Prof. Flint, and confirmed by other observers, seem to prove that the hepatic vein does constantly contain a minute trace of sugar, and that therefore the process is constant and normal.

The formation of cholesterine is also considered in detail, and the observations of the author concerning the functions of the liver in excreting this material, confirmed. A monograph upon this subject was published by him some years since, going to prove that cholesterine is excreted by the liver as urea is eliminated by the kidneys. Various experiments upon blood taken from both veins and arteries, show a much larger amount of cholesterine in the former, and it appears to bear the same relation to nerve disintegration that urea does to muscle waste. It is more than probable that any obstruction to the elimination of this effete product gives rise to constitutional disturbance as grave as that existing in uræmia. It is to be hoped that the knowledge of this excretory function of the liver may lead to valuable results in the treatment of disease.

In regard to the appearance of the work we need only to say that Messrs. Appleton have issued it in their best style.

THE PHYSICAL LIFE OF WOMAN. Advice to the Maiden, Wife and Mother. By George H. Napheys, A. M., M. D. Fourth edition. Published by G. W. McLean. 1870.

A work like the present must, from the nature of the case, be powerful for good or evil. The author needs to possess, in a high degree, the spirit of chastity and purity, as well as the most thorough scientific acquaintance with his subject. Dr. Napheys has performed his task well in the main. Some portions of the work, especially that pertaining to love and marriage, seem to us to partake too much of the sensational character, and to tend to excite a prurient curiosity. We do not think it well to put such a work into the hands of young, unmarried women. In so far as it relates to their own organization it is well they should *know themselves* and their physical peculiarities; but when it comes to unveiling the secrets of the marriage bed to a pure minded maiden, we say nay; no good can come of it; it is like the touch of rude fingers upon the bloom of the grape, the beauty is tarnished.

As regards the wife and mother, the same objections do not hold. The book is full of good things, and is well written, with the exception above mentioned, and we can conscientiously commend it.

BELLEVUE AND CHARITY HOSPITAL REPORTS. 1870. D. Appleton & Co., New York.

This volume is, we believe, the first which has been issued in New York. It embodies a series of valuable papers by a number of the most prominent attending physicians and surgeons of the hospitals. The only regret we feel is, that it is not more comprehensive. When it is considered that these two institutions yearly harbor individuals enough to populate a large city, it is to be lamented that the records cannot be systematically published for the benefit of the profession at large. We hope the present volume is but the earnest of more to come.

PAMPHLETS AND PERIODICALS RECEIVED.

PROCEEDINGS of the Texas State Medical Association, held in the city of Houston, June 15, 1869.

THE Physical and Medical Topography of Wheeling, Va. By James E. Reeves, M. D.

ANNUAL REPORT of the Commissioner of the State Land Office of the State of Michigan. 1869.

CONTRIBUTIONS to Practical Laryngoscopy. Reported by A. Ruppanner, M. D. Reprinted from the *N. Y. Medical Journal.*

The Technologist, especially devoted to engineering, manufacturing and building, $2.00 a year; 36 pp. Published monthly at 176 Broadway, New York. We have received the first number of the journal, and can commend it to all who are interested in these subjects. We find, also, many items of general interest. The typographical appearance is good, both as regards paper and type.

The Gardeners' Monthly, edited by Thos. Meehan, 23 N. Sixth St., Philadelphia, Pa.

We take much pleasure in calling attention to our agricultural and horticultural exchanges, knowing that the medical profession are, perhaps, more than any other class of professional men, fond of horticulture, both ornamental and useful. Among the candidates for favor, the above journal holds a high position. Devoted chiefly to gardening, it pays especial attention to practical instructions in this branch, and also notices fully and promptly all novelties among flowers, fruits and vegetables.

B. K. Bliss & Son's Illustrated Spring Catalogue and Amateur's Guide to the Flower and Kitchen Garden, for 1870, 41 Park Row, New York. Just now there seems to be a grand strife among seedsmen as to who shall issue the most elaborate and useful catalogue. So far, the above gentlemen bear off the palm as regards size and variety of contents. The introduction of cuts of the finer varieties of flowers adds very much to the value of the pamphlet, and we can say that most of the figures are very good and give a correct view of the plants. We have dealt with Messrs. Bliss & Son since our boyhood and have very rarely been disappointed in the seeds obtained.

Catalogue of New, Rare and Beautiful Bedding and Greenhouse Plants. From John Saul, Washington, D. C. Among florists Mr. Saul is a favorite, and his list does truly present a tempting variety of rarities for lovers of the beautiful. Most bedding plants can be sent safely by mail, so that the expense of carriage is very trifling, even from so great a distance.

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CHARLES T. PARKES, M. D., Demonstrator.
H. F. CHESBROUGH, M. D., Clinical Assistant and Prosector of Surgery.
FRANCIS L. WADSWORTH, M. D., Assistant to Professor of Physiology.

The Twenty-eighth Annual Course of Lectures will commence on Wednesday, September 28th, 1870, and continue eighteen weeks.

Fees.—Lectures, $55.00; Matriculation, $5.00; Dissection, $5.00; Hospital, $5.00; Graduation, $25.00.

Daily Clinics at the Dispensary (except Sundays). Surgical Clinics on Saturday afternoons throughout the year, at which patients from the *country* and *city* are treated gratuitously.

Hospital Clinics are abundant and varied.

For Annual Announcement, or any information with reference to the College, address the Secretary,

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DETROIT
Review of Medicine and Pharmacy.

VOL. V. APRIL, 1870. No. 4.

PLACENTA PRÆVIA.

A Paper read before the Detroit Academy of Medicine by C. B. Gilbert, M. D.

CASE 1.—A few years ago I was called into the country, some twelve miles, to visit a patient who was said to be "flowing." She was about eight months pregnant. By the time I reached the house the flooding had ceased. A careful examination revealed placenta prævia—the os uteri easily admitting the point of the finger without producing any tension. I enjoined rest, etc., with directions to be sent for upon the slightest return of the hemorrhage. In four days I was sent for again, and, as at the first visit, the hemorrhage had nearly ceased before I reached the house; but there was more dilatation of the os uteri, and labor was more threatening. Examining again, the slightest touch was followed by a gush of blood. The placenta was nearly central. Forcing my hand without difficulty through the easily dilated os, I seized the foot, brought it down, and in a few moments delivered the mother of a dead fœtus. The mother, somewhat weakened by subsequent hemorrhage, recovered very well.

CASE 2.—Not many months after this, I was in consultation with Dr. C., of Sandwich. The woman (colored) was in labor, at full term, flooding moderate; placenta covered the internal os more or less completely. Version was easily performed, without much delay or hemorrhage. The child was saved and the mother had a good recovery.

CASE 3.—In this, at the time I first saw the patient, she was much reduced from loss of blood; pulse was steady, without great frequency, but easily obliterated by pressure; skin and lips pale; sensation still very acute; jactitation constant.

The os uteri was sufficiently dilated to admit the hand without much force; placenta was adherent over the internal os, except at the left side. The membranes had ruptured, and there were no uterine pains, nor were there any signs of fœtal life. Under these circumstances, I judged it proper to deliver by version, which I did, with some delay, however, occasioned by her dorsal position; but by placing her on her side, moderate traction was followed by the delivery of a dead child. In half an hour the mother, who at first somewhat revived, rapidly sank and died.

These three cases are more or less typical of the large number of those that come under the obstetrician's observation. The first represents that large class of mothers saved by timely interference. The second illustrates the safety to mother and child, when uterine contraction favors the additional aid afforded by art. The third, the great mortality of both mother and child when, from delay or other causes, both nature and art fail us in the greatest hour of need.

If we consult authorities for guidance in the treatment of these most trying cases, without reflecting on the merits of authorship, we can hardly fail to be impressed with this idea, that too much stress is laid on some favorite mode of treating *all* placenta prævias, than classifying the cases and applying their appropriate treatment. Now, all classifications not based on natural and persistent properties or conditions, are more or less arbitrary. Still, I think a division that, on the one hand, shall include mother and child, and on the other, the mother alone, is feasible; for if the child be alive either before or at full term, a treatment that might easily enough save the mother, would sacrifice the child; while a different course would save both. If, however, the child be dead, or we find it impossible to ascertain its vital condition, and the mother's life is in danger, I should proceed as if it were *known* to be dead. The treatment thus limited to the earlier periods of hemorrhage, is such, indeed, as has reference to the preservation of fœtal life, which we know is often sacrificed by the loss of the smallest quantity of blood. How doubly anxious, then, should we be, to divert the first cause of its death—to preserve as long as possible its maternal connection—that nothing shall be done to sever this union till nature asserts her own prerogative. These means are chiefly *rest*, avoidance of stimulants as to food or drink, cooling or cold applications to the vulva, if they do not produce shivering or chills, anodynes, etc.

But, as if to mock our well intended efforts, this respite is too often abbreviated. Our treatment, however well directed heretofore, must change as the case progresses, for if we continue it *beyond* the period when it ceases to be of use to the child we lose the opportunity of rendering greatest service to the mother, for whom as our anxieties increase, our considerations for the former diminish.

But the time has now come for manual interference. Medicines that were at first primary are now auxiliary in their use, and let us not commit the too frequent error of suggesting a treatment without first supposing its correlative conditions. Let us turn back to our first patient, at the second visit, assuming the vital integrity of the fœtus, the dilatable condition of the os uteri, and that no valid objection exists to adopting either of the three or four methods of delivery, *i. e.*, by version, detaching the placenta and withdrawing it before, or leaving it to be expelled after the fœtus, the use of the tampon or dilators, or the more questionable method of uterine astringent injections.

Now, the case in question is just one of those in which each of the several methods indicated has been at some time or other used, with varying results, and if all cases of placenta prævia were alike, it would be easy to form an opinion as to their relative merits; but such is not the fact. Let it not be forgotten that *uterine contraction* is the *sole* condition of *success* to ourselves and safety to our patient. I now think that had I used the tampon I might have succeeded in saving the child; whereas, by detachment, I should have run great risk of losing it; so, also, by artificial dilatation, though I might have postponed hemorrhage, while hastening labor, unless the pains were strong the child was liable to perish; as it was, I only saved the mother. I do not think the case represents that class in which detachment is appropriate or judicious, for if we examine the reported cases where it has proved most successful we find they are such as are characterized by great exhaustion, when version would be dangerous, or when the placenta is partially separated and lies more or less loose in the vagina, and when uterine pains are sufficiently vigorous to expel the uterine contents.

But it may be asked, if placental separation be so appropriate in cases where pains are strong, how is it also available in cases of extreme exhaustion, when, from loss of blood, more or less uterine paralysis must co-exist? Now, it is conceded by the closest observers that separation of the placenta from its uterine attachments is usually followed by cessation of hemorrhage. This is the general statement, but an examination of the cases will show further, that considerable uterine pains must and do concur, by which the hemorrhage is checked. When it fails, as it sometimes does, the operation of version in utero is the last resort. The mortality to the mother under this operation is stated by Dr. Simpson to be 1 in 14, and of children 69 per cent. This anomaly is explained by the fact that no distinction is made between artificial separation and natural expulsion by natural efforts. "Dr. Simpson," says Churchill, "has recorded, in his tables, but *one* case of the child being born alive, when the interval after the expulsion or extraction of the placenta was more than ten minutes; and sixteen of the seventeen children, in the cases quoted from Dr. West, were lost." It is presumed that in any manual operation with a view to expedite delivery, other means will be employed to aid, such as rupturing the membranes, brandy, ergot, etc.

Looking at our second case, where hemorrhage was only moderate at full term, and pains good, yet too far advanced to use tampon or dilators; the child alive; detachment would greatly jeopardize its existence. I have no doubt that in such cases, version, if skillfully performed, is better treatment than separation. While it is broadly stated that the maternal mortality in version is one in three, and that more than half the children perish, no mention is made of the circumstances under which this fearful mortality occurs.

But if we consider that out of 192 versions, for various causes, only twelve mothers were lost, or one to sixteen, we must look elsewhere than to turning alone for the missing link in this chain of mortality, and I apprehend that the danger is greatly enhanced by prematurely forcing the hand through a rigid os uteri, or turning during extreme exhaustion, or before its advent, no precautionary measures being taken to prevent it. No rules can be laid down as to how large the os shall be before manual introduction shall be attempted. The experienced and educated touch must be the guide in such cases; the most resisting os would seem to be the most suitable for the tampon or dilator; in fact, the artificial expansion of the os admits of no other means. In no case, however, should the tampon be employed where there is a fair probability of internal hemorrhage, nor when uterine irritability is such that premature delivery is to be avoided. The well known power of the plug in inducing uterine contractions admonishes us not to prolong its use longer than this, its object, is accomplished. Further, it is not desirable. Its principal function is to prevent flooding by the formation of coagula which shall press upon the open mouths of the bleeding vessels, till supplemented by natural or artificial delivery. But to be of any use it must be done thoroughly, for not only must the articles used be well and closely impacted against the os, but they must be kept there by the perineal bandage and pad.

Of twenty cases reported by Dr. Radford, the tampon was used seventeen times. Of these, all the mothers recovered, and fourteen children were saved. In all these, artificial detachment was resorted to six times; in the remainder, the presenting portion of the placenta was separated and pushed aside, allowing the head to pass by the natural efforts. Of the six deaths to the children, five deliveries were by version (to save the mother). Dr. Radford also lays down the rule, that we are not to detach if we can turn easily, the child being alive. It must not, however, be understood that extraction of the placenta or version of the child is to be avoided, even though plugging has reached its limits of utility.

We shall gain but little if we content ourselves with merely expanding a rigid os or restraining a momentary hemorrhage. If the pains are feeble, they must be strengthened by their appropriate agents; if they are strong, and no physical obstructions prevent the expulsion of the fœtus, no great danger need be apprehended. It is seldom that we see great flooding co-existing with vigorous uterine pains.

Applying our principles to our third case, when fœtal life is already compromised and the patient greatly prostrated, the absence of efficient labor pains, with continued hemorrhage, calls for prompt and intelligent treatment. Coolness, no less than skill, must come to our rescue. As said before, consideration for the child lessens as the prospects of saving it recede; and this fact relieves us of those duties and obligations which before were somewhat paramount, while means of safe delivery to the mother are in the inverse ratio of the dangers to be overcome. Death from slow exhaustion, if we unwisely turn, will be as inevitable as if the patient be left to chances of hemorrhage during natural labor, *i. e.*, if the pains at the time of labor are at all efficient. This exhaustion has two principal sources: that occasioned by forcing the hand through the rigid os, followed or not, it may be, by the sudden evacuation of the womb's contents. It is claimed that where there is sufficient flooding to cause considerable alarm, the os is so much softened as in a very great degree to overcome the natural rigidity. This is said to do away with the objection to version, and we must concede to it some weight. The same objection is made in defense of detachment of the placenta, which, being so much more easily accomplished, and being also followed by little flooding, is supposed to quite supersede any advantages likely to accrue to turning. The relative merits of these two methods, version and detachment, must find their expression in facts, not theory. Now, if we turn to the conditions in which detachment is thought, by its advocates, to supplant version, they will be found, according to Dr. Simpson, to be, failure of "milder measures," hazard of turning,—but this, being the point in dispute, seems to me to be begging the question,—death of child "in labors supervening earlier than the seventh month," a contracted os and undeveloped cervex, etc. Of these, but one condition relates to the child, and that is its death.

Of three by Dr. Radford, one is from fear of exhaustion by turning, another a pelvic deformity, and the third the death of the child.

Dr. Edwards divides them into six conditions, one of which only relates to the child.

But, if we look to the cases in which complete detachment has been mostly adopted, and in which it has been followed by the most favorable results, they will belong to such cases as are attended with efficient uterine contraction. Great exhaustion and strong pains are not usually concomitant conditions. The result of severe flooding is to enfeeble the vital powers to such a degree as renders artificial delivery imperative. This enfeebled state is the very occasion of our interference. This increased resistance set up by diminished power commands our aid. We supply it in part when we rupture the membranes and evacuate the liquor amnii. The hand that grasps the large inflated ball exerts less power than it does when the ball has collapsed.

When Dr. Simpson speaks of "exhausting the placenta," he evidently not only points to what he considered the source of hemorrhage, but believed that in that procedure he gained power at the expense of diminished resistance. But this theory of exhaustion, if we may judge by the opposition it has met, is not quite exhaustive. If we knew precisely how uterine contraction takes place, whether directly in the bleeding vessels, or indirectly through a contraction of the uterine cavity upon itself, much valuable information would be gained. Thus far we have, through the induction of facts, good reason to suppose that uterine contraction is the principal, if not the only method. This being the case, detachment alone could not secure immunity against danger.

"Contraction of the womb," says Dr. Barnes, "is the condition upon which the arrest of hemorrhage depends." "We see," he continues, "the bleeding persisting so long as there are no effective pains and no contraction."

The treatment by uterine astringents injections is not without its advocates, and one almost regrets that a treatment so simple and so easily carried out, could not be made more successful. That it has succeeded in a few cases is true, but that it can be made generally effective, I think is extremely doubtful. The danger attending its use, so far as I know, is that it is liable to excite serious if not fatal inflammation. The admonitions given by authors in the use of fluid injections for the purpose of producing abortion, should caution us as to their adverse use in unavoidable hemorrhage. We know the facility with which a mild application frequently lights up an uterine inflammation; how much more likely, then, may we do injury by throwing a quantity of caustic fluid *into* the womb. If pus may be absorbed and produce pyæmia, may not liquids be also absorbed with serious results? The objector replies, the facts are against the theory —the gravid uterus is so modified that little danger is to be feared.

Dr. Fluck reports (for October, 1868) five cases thus treated. The remedy used being tincture of iron in cold water, in such proportion as to impart to the mixture a greenish yellow-brown color. The advantage of this treatment, he says, is that it checks hemorrhage and enables you to make examination without meeting any obstacle. If frequent examinations were the object of treatment or desirable, the claim might hold. After arresting the hemorrhage, ergot is given and the membranes ruptured. Four of the mothers were saved. All the children perished, except one, which was born alive, but *anæmic*.

The report of these cases is too indefinite to form a just conclusion of the treatment pursued, and I should hesitate before recommending it, without specifying the cases in which it ought to be used. It is a law of remedial applications, of an astringent nature, that as their local activities are great their diffusibility is lessened. Applied to a bleeding surface of great extent or profuse in quantity, the hemostatic must be correspondingly great. If, therefore, a sufficient quantity were thrown into the cavity of the womb to arrest a profuse hemorrhage, not being able to limit its application, we can hardly fail to inflict danger to the patient.

A single remedy remains to be mentioned, appropriate in those atonic cases accompanied with much hemorrhage, and where version would involve great danger to the mother. I refer to galvanism. Its well known power of inducing muscular contraction in decapitated animals, and where there is loss of vitality, should make it preëminent in patients exhausted from hemorrhage. In the few cases in which I find it employed much benefit was obtained. Where it cannot substitute other modes of delivery, it at least seems to be of great use in exciting uterine contractions.

ON A FORM OF AUTUMNAL FEVER PREVAILING IN THICKLY POPULATED MALARIAL DISTRICTS.

Read before the Detroit Academy of Medicine by Geo. P. Andrews, M. D., Professor of Principles and Practice of Medicine, in Detroit Medical College.

THE experience of our armies during the late war gave prominence and definiteness to our knowledge of the pathology of a type of fever known as typho-malarial; which, taking its origin in crowded camps situated in a region rife with paludal miasma, evidently depended upon the combined effects of marsh and animal poisons upon systems depressed by exposure and hard labor, with improper food.

A fever practically the same, and arising from similar mixed causes, exists to a greater or less extent in most large cities where marsh miasma prevails. Occasionally epidemics occur in rural districts, presenting, in connection with and modifying the usual intermittent and remittent malarial fevers, a marked typhoid element, continued in its course, and obstinately resistent to antiperiodic remedies. These epidemics may be remarkably localized, or scattered over comparatively wide tracts. In some instances the origin of the animal poison complicating the paludal, is discoverable, and at others it baffles research. As a proof of the compound nature of this type of fever, cases are observed presenting predominant symptoms characteristic of the one or the other poison, according as the individual is exposed to either in a more or less concentrated form, producing a fever in which the evidences of the paludal element are to a greater or less extent obscured, or, on the other hand, where the action of the marsh miasma is intense, the periodic nature of the case may cloud the typhoid symptoms. Still, a careful analysis will usually make plain the true nature of the disease.

Having been appointed to present to the Society a paper concerning the particular type of fever observed with unusual frequency during the last autumn, I have introduced the above preface for the purpose of rendering more clear my views upon the origin and relationships of the disorder.

Season of Prevalence.—Cases are observed sporadically throughout the year, but the largest number occur between the 15th of August and the 1st of November. Different years show a great variation in the number of individuals attacked, some seasons showing almost an epidemic frequency, and during others forming but a small per centage of the diseases treated by physicians. It is most prevalent among the lower classes, where the hygienic surroundings, as regards sewerage and ventilation, are bad. When occurring among the better classes, we can usually trace the attack to exposure to miasmatic influences accidentally.

Course and Symptoms.—The fever generally develops gradually, though its onset may be sudden. The sufferer complains of a feeling of languor and inaptitude for exertion, but still keeps about, and perhaps attends to business, wondering why his mind is so confused and his limbs so tired, constantly; the appetite is capricious and dull pains are felt in the bones and lower extremities. Gradually the disturbance increases; chilly sensations supervene, rarely a distinct rigor, occupying a portion of the day for two or three days, and attended by a somewhat quickened pulse and frequently a dull headache. Finally, the chills cease, the feverish action becomes more decided, and the headache a more distressing symptom. Nausea and vomiting, with epigastric tenderness, are frequently present; the tongue is coated, and at this period of the attack rather broad and flabby, though later, particularly when typhoid symptoms predominate, it will be red and pointed, perhaps dry. The pulse ranges from 100 to 120 beats a minute, and is more commonly compressible; the appetite is usually lost, though in mild cases food may be relished throughout the attack; sleep is disturbed and unrefreshing, and the patient will often declare, for days together, that he has not slept. Severe grinding pain in the lumbar region is a source of much distress, often accompanied by aching in the lower extremities. The bowels are, in most instances, confined, aperients being repeatedly required, though the stools, when passed, are loose and dark, with offensive odor. In exceptional cases diarrhœa, with iliac tenderness and gurgling, point to the existence of intestinal lesions, and these symptoms also attend cases where the typhoid element is more marked than the malarial. The condition of the skin, also, varies with the type of the disease, in the more sthenic forms remaining dry and harsh during the first week or ten days; in mild cases moisture may be constantly found during the remission. The urine is high colored and acid, often scanty, and depositing freely the lithates, though these more frequently appear at the establishment of convalescence. Delirium is a common symptom, of a low type, and the patient can readily be aroused to give replies to questions, though after recovery his remembrance of this period of the disease will be very incoherent and vague. During sleep there is constant muttering in a low, indistinct tone.

The fever rarely breaks before the tenth or fourteenth day, sometimes continuing into the third week; generally, however, convalescence is established by the fourteenth day. I have not observed any critical day, the period of improvement being so gradual as not to be noticed. One of the early signs of improvement is the occurrence of profuse perspiration during sleep, even while there is febrile action during the day, with frequent pulse. The period of convalescence is marked at first by extreme slowness, day after day passing with little change for the better, the circulation remaining accelerated, the appetite capricious, and muscular prostration profound; when, however, the nutritional apparatus reëstablishes its functions, food is again craved and assimilated, and health and strength speedily regained, although a degree of languor and muscular debility remains for some weeks.

Relapses rather rarely occur. Complications are not infrequent; of these, pneumonia is perhaps the most common, of a low type, creeping on, it may be, with no warning of cough, pain, or expectoration, and the consolidation largely hypostatic, upon examination is found to involve a large portion of one or both lungs, before mischief is suspected. When a return of fever is observed after convalescence has commenced, denoted by increase of temperature and rapid pulse; careful examination of the thorax should at once and frequently be made, to discover and meet the onset of so dangerous a malady. Cerebral and cerebro-spinal symptoms often cause anxiety to the physician, and where accompanying a relapse, lead us to apprehend a fatal result.

The *prognosis*, in uncomplicated cases, is generally favorable, the disease proving untractable in proportion as the typhoid element is predominant and severe.

The *lesions* observed in fatal cases are those of typhoid fever, with the hepatic and splenic degeneration observed in malarial poisoning. The enteric ulceration is, I think, *almost always* to be found, for the reason that the cases where the marsh malarial element predominates are of mild nature, and nearly all recover, while those which are fatal are more markedly typhoid.

I have assumed, thus far, in the paper before you, that this fever is of a compound nature, depending upon the simultaneous action of two zymotic poisons upon the organism, each exerting a modifying influence upon the other and producing a malady identical with neither, and yet bearing the impress of both.

The argument has been presented against this theory, that two poisons exerting their specific effect together are contrary to our experience: but how common is it to see pertussis and rubeola coincident, or pertussis and scarlatina; or, more to the point, each of these, with the manifestations of the influence of marsh malaria upon the system, and the general course of each disease modified and even masked by the other. The all pervading presence of paludal miasma in our city is universally recognized, and we are constantly obliged to have recourse to antiperiodic remedies in the treatment of maladies, in which, but for this omnipresent influence, they would be positively contra-indicated. Why, then, may we not have the cause of typhoid fever acting coincidently with marsh miasma? The conditions for its production are everywhere present, and we find the disease occurring under just those circumstances where it should most prevail, *i. e.* in poorly drained and thickly populated neighborhoods, where proper attention is not paid to the removal of animal filth. Another point I regard as important in the way of proof: in the compound fever, quinine is generally harmful, the fever becoming more markedly continued under its influence, and the typhoid symptoms more pronounced; in other words, we eliminate the milder poison, and leave the graver to work its full course upon the patient. It is my own belief that the marsh malaria has an ameliorating effect upon the animal poison, but I am not prepared to-night to bring my proofs of this. In cases where the marsh poison is more virulent and the symptoms which show this type more clearly defined, we find that quinine will work beneficially; the typhoid element is so slight that we have more to apprehend from the former, and consequently its elimination is favorable to the patient.

I draw, then, from my premises, these propositions: 1st. Marsh and animal miasmata may co-exist in the same system, producing morbid phenomena. 2d. Marsh and animal miasmata are to a certain extent antagonistic. 3d. The poison which is present in the most concentrated form will exert a preponderating influence upon the course of the disease.

Prof. Flint, in his work on practice, page 847, third edition, says: "Typho-malarial fever is caused by the combined action of malaria and the special cause of typhoid fever. * * There is a combination of both diseases, the phenomena of one or the other disease predominating in different cases." Prof. S. H. Dickson, of Philadelphia, in a paper read before the American Medical Association in 1852, advances similar views:

Treatment.—At the outset of the disease, particularly where the functions of the chylo-poietic viscera are disturbed, and vomiting of bilious matter is a distressing symptom, a mercurial cathartic will be indicated, followed by a saline, if full purgation has not followed the former. If the bowels are already irritable, ⅛ gr. doses of calomel, combined with an opiate, will speedily allay the nausea and purging. If the febrile symptoms are pronounced, the neutral acetate of ammonia combined with fluid extract of gelsemium or veratrum viride may be given as a diaphoretic and sedative. Generally the expectant plan of treatment should be followed, medication being resorted to according to the pathological indications. The tendency of the disease being decidedly towards prostration, nourishment should be afforded from the commencement, and among the articles proper, I place milk first, either alone or with lime water. The various animal broths are next. Where the system will bear it, light solid food, animal or vegetable, may be allowed. Stimulants will usually be required to a greater or less extent. The exhaustion accompanying convalescence should be met by ferruginous and bitter tonics. Syrup of the phosphates of iron, quinine and strychnia, is a good combination, or pills of the citrate of iron and quinine with strychnia. Nutritious diet, with gentle open air exercise, should not be neglected.

I append a few cases illustrative of the foregoing remarks:

CASE I.—*Malarial Element Predominant. Recovery.*—H. H., American, male, aged 21; well developed; previous health good. Had complained of "feeling ill" for some days; pain in the back, worse in the fore part of the day. Saw him first in the forenoon. Severe pain in the head, eyes suffused, pulse above 100, tongue thickly coated with yellowish fur, headache, nausea and vomiting; had been chilly previously. Ordered calomel, gr. iv., to be followed by saline cathartic. For relief of febrile symptoms, acetate of ammonia and sweet spirits of nitre every three hours. Dover's powders gr. v. *pro re nata.* A marked remission occurred, when quinine was given in full doses, with the effect of moderating the activity of the symptoms, which became more markedly typhoid in their character, but still with decided remissions; quinine omitted for a few days and again resumed and given at the rate of 2 grs. every three hours for the next eight days, without producing any indications of quininism, and with the effect of moderating the severity of the fever, as proved repeatedly by discontinuing the remedy and observing immediately exacerbation of all the symptoms. During the third week diarrhœa, with slight tympanites and tenderness in the right illiac region appeared, but yielded readily to treatment. The patient was convalescent at the close of the third week.

The long sustained tolerance of quinine was an interesting feature in the case, the symptoms of its specific effect not appearing until after the eighth day of exhibition.

CASE II.—*Typhoid Type. Recovery.*—M. C., Irish, female, aged 18; of rather delicate appearance, but health generally good. Had been sick three weeks when I first saw her; during the early portion of the attack, symptoms had been remittent in character, but attended by great irritability of the alimentary canal. Treatment had been expectant and supporting. At this time there was nearly constant delirium of low type, becoming more active at night; sleep disturbed, sometimes subsultus tendium, sordes on teeth, tongue glazed and red, often becoming dry and fissured; eyes dull and glassy, stomach very irritable, abdomen tympanitic, illiac tenderness, constant liquid diarrhœa, pulse feeble and very rapid; patient regarded as almost hopeless. Treatment directed almost wholly to sustaining the powers of life; beef tea, stimulants, milk, given as often and freely as the stomach would bear them; for the gastro-intestinal disturbance, bismuth and svapnia were given, followed by aromatic sulphuric acid. After a number of days, slight improvement could be discerned, and the patient gradually rallied, only to relapse and descend almost as low as before. Again she mended, and this time permanently, although it was a month before she was able to go out.

CASE III.—*Typhoid Type. Recovery. Pneumonia Complicating Convalescence.*—M. A. R., Irish, female, aged 14; delicate, scrofulous diathesis. The fever pursued its ordinary course, not attended by much diarrhœa, and the symptoms were not very grave at any time. Convalescence established during the third week; pulse nearly normal; appetite improving. Without any apparent cause, the pulse suddenly rose to 115 or 120; temperature also elevated, with restless nights and loss of appetite. Neither the typhoid nor the remittent symptoms returned, and there was no cough, expectoration, pain or quickened respiration to call attention to the lungs; yet, physical exploration determined dullness on percussion, with the subcrepitant rale at the base of the right lung. The consolidation was hardly of an acute type, but largely hypostatic. Carbonate of ammonia, with gelsemium and quinine, assisted by stimulants and careful attention to nutrition, sufficed to tide her over this complication, and she convalesced without further accident.

Case IV.—*Malarial Type. Relapse early in the third week, attended by Violent Cerebral Excitement. Death.*—D. S., Irish, male, aged 36, laborer in foundry. The neighborhood is poorly drained, the bank of the river being marshy, and cases of malarial fever, particularly remittent, very common. The early history of the case not peculiar; symptoms of improvement marked, at the middle of the second week; pulse moderate, skin and tongue moist, appetite returning. Sudden aggravation of all the symptoms, attended by violent cerebral excitement, amounting almost to phrenitis; pulse full and rapid, pupils dilated, skin bedewed with profuse perspiration, face injected. Two leeches applied to the temples, relieved the more urgent symptoms; but delirium of a low character, with muttering and picking of the bedclothes, continued; and the close of the case was marked by all the symtoms attending fatal typhoid fever. Quinine acted favorably during the onset of this disease, all the symptoms improving under its exhibition; but at the time when the graver features of typhoid fever appear, we had a relapse, apparently, perhaps, rather, the development of the effects of the special cause of typhoid fever, which ran its course uninfluenced by marsh malaria.

Case V.—*Mixed Type. Recovery.*—L. C., American, male; aged 35; nervous temperament; business man; had over-worked his brain for some months, and was somewhat anæmic. The disease was not severe in its course, but attended with a good deal of mental disturbance of a mild character. The attack was slow in its onset, having been preceded by inaptitude for exertion, pains in the limbs, and general *malaise*, for a number of days. About the third day after the fever was developed he was attacked by violent spasmodic action of the diaphragm, during which the thorax was forcibly expanded to its utmost limit, then as forcibly the air was expelled, almost with a scream. The forced respirations would recur from three to five times, and then there would be an interval of rest of from five to twenty minutes' duration. A homœopath was in attendance, but the remedies used were ineffective, and on the fifth or sixth day of the fever I was called, finding the condition of the patient truly pitiable, the paroxysms recurring every four or five minutes and continuing nearly as long. The lungs were filled to their utmost limits, the expiratory force not being adequate to expel all the inspired air before a new volume entered. The thorax was unnaturally prominent, and upon percussion resounded like a bass drum. The distress amounted to agony. Regarding the disturbance as sympathetic (it seemed like an exaggerated hiccough), I prescribed at once fifteen grains of bromide of ammonium with three drops of fluid extract of belladonna. After taking the first dose there were but two paroxysms, and in an hour they had almost entirely disappeared, and were kept in abeyance by the continued administration of sedatives, and gave no further trouble. There evidently existed an anæmic condition of the nervous centers, and consequently great attention was paid to nutrition. Stimulants were given moderately, and the patient made a satisfactory convalescence with no further complications. I have detailed this case thus minutely as the nervous complication is a rare one, and afforded me much interest and instruction.

The foregoing cases are selected as giving a fair exhibition of the various phases assumed by the disease in my own experience, and to my mind they afford strong proof of the compound nature of the disease.

Dr. Samuel Brown, R. N., has been elected Lord Mayor of Belfast, Ireland, for the ensuing year.

ÆSTHETIC TREATMENT OF CONGENITAL FISSURE OF THE LIP, WITH CASES.

A Paper read before the Detroit Academy of Medicine, by Henry F. Lyster, M. D., Detroit.

CASE 1.—C. S. B., aged 12 years, Oakland Co. Single fissure of the lip upon the left side of the mesial line, unaccompanied by any insufficiency of hard or soft palate, or malposition of incisors. Operated upon, while under sulphuric ether, by the new operation of Dr. Collis, of Dublin, October 27, 1868. The stitches were removed in four days; adhesive plasters were applied on the removal of the sutures, to prevent stretching of the new tissue by the levators and orbicularis oris muscles; union throughout by primary adhesion. The lip presented the Cupid bow or depending point in the centre, without any notch and with a proper and sufficient thickness along the line of union.

CASE 2. W. S. B., aged 20 years, St. Joe Co. Central congenital fissure of the hard and soft palate, superior maxillary, and upper lip, continuous throughout. The fissure was much wider than usual with no depending central portion. The cartilage of the septum nasi was wanting. Chronic follicular pharyngitis was very extensive, and the whole mucous membrane of the nares congested. Want of power to articulate words distinctly rendered it necessary for him to communicate by writing, as a general thing. An impression of palatal fissure was taken for a plate, the fissure being too wide for an operation on the hard palate, and the Collis operation made December 12, 1868. The patient was under anæsthesia. The case was one that demanded the use of adhesive plaster, as the soft parts were so greatly put upon the stretch. These were removed and the sutures withdrawn December 19, when union was found to have taken place by primary adhesion in the upper two-thirds of the incision. A stitch was taken in the lower part of the wound and adhesive strips were reapplied. The case went from under observation at this time, and while in a fair way to recovery. The preservation of every particle of tissue was urgently demanded in this case.

CASE 3.—W. B., aged 21 years, Clinton Co. Double congenital fissure of the lip, and cleft palate. Intermaxillary bone attached to vomer and sustaining two central incisors projecting horizontally. Operated upon both sides, the patient being under anæsthesia, December 16, 1868, by the Collis method. The central flap was put somewhat upon the strain, but its vitality was not diminished, as it received nutriment through the pared edges in a few hours. The intermaxillary bone, with its two incisors, was sacrificed, being removed by the bone forceps, on account of the want of soundness of the incisors. This step, I am now of the opinion, had better not have been taken, for reasons hereinafter mentioned, and I would strongly advise against it. The sutures were removed December 19. The whole line of incision on either side, with the exception of about one-fourth of an inch upon the right side, was found united by primary union. The limited ununited portion was freshened and a suture of silver wire introduced. Adhesive straps were applied, and upon January 6, 1869, the union was found to be complete, with no deformity; on the other hand, a pleasant expression having been produced by the new outline to the lip and profile. A plate was recommended for the fissure of the palate, as he would not consent to an operation for staphyloraphy. In cases where the operation for uranoplasty or closure of the fissure in the hard palate is to be performed, the plate should not be advised, as, in accordance with well known laws, atrophy from pressure would ensue and the fissure become larger and have thin edges.

Case 4.—J. L., aged 10 months, Clinton Co. Single fissure of the lip and cleft palate; nursing. Operation by Collis' method, January 6, 1869. The straps did not adhere, and the sutures were too strongly drawn upon, and cut out. My impression is this, that the ala of the nostril was not dissected up freely enough from its attachment to the superior maxillary. The child also disturbed the wound by its attempts at nursing. A subsequent operation was recommended, at which time it is intended to use a Hainsby truss or spring cheek compressor to prevent the retraction of the muscles. The new operation was resorted to in this case, but was in no way responsible for the result.

Case 5.—J. S. H., aged 6 months, Jackson Co. Double hare lip and fissured palate. Operated upon right side by Collis' plan, February 23, 1869, and upon the left side March 10. Both sides united perfectly throughout, giving a beautiful outline to the lip.

Case 6.—C. S. B., aged 18 years, Wayne Co. Simple single fissure of the lip. The Collis operation was performed March 20, 1869, with a perfect result.

Dr. Collis' operation is performed by placing in position all projecting hard parts, either by partially detaching them by cutting a notch, or by forcing them back with a protected bone forceps, and after a suitable length of time operating upon the soft parts in the following manner: He cuts through all the structures of the lip except the mucous membrane, upon the longer side, beginning at the upper angle of the fissure, or when this is complete, at the inner and lower edge of the nostril, and follows the carmine border of the fissure to a point opposite the true frenum, leaving in this way a flap, composed of the edge of the fissure, hanging by a post-labial mucous membrane hinge of equal length. On the shorter side he penetrates directly through all the tissues of the lip, beginning at the origin of the first incision, in single simple fissure not entering the nostril; and when there is no floor to the nostril, at a point nearly on the same elevation and opposite the original point of departure. He goes down the shorter side within a fifth or a sixth of an inch of the edge of the fissure, making an incision one half as long as the one on the opposite side. In cases of complete fissure into the nostril, he cuts at the middle of the second incision into the fissure, thereby making two flaps. The extremity of the flap hinging above is fastened into the upper end of the first incision, *i. e.* near the septum nasi, and makes at once a floor to the outlet of the nostril; while the flap hinging below is turned downward, and its extremity is fastened into the carmine extremity of the primary or long incision of the opposite side. The raw surfaces are now brought together as usual with interrupted sutures of silver wire or horse hair.

In case the fissure does not extend through the upper portion of the lip only one flap on the shorter side is necessary, its extremity beginning at the point of origin of both incisions, and its hinge being formed at the lower extremity of the short incision. The extremity of this flap is at once fastened in the carmine extremity of the primary incision, and the two opposing surfaces united as above.

The long flap left hanging by its mucous membrane falls back of and adheres to the line of union, giving requisite thickness at a point where the lip is usually so thin. The lack of proper thickness is equaled as a deformity only by the notch in the nasal or labial border. By avoiding the separation of the true frenum when the dissection of the false attachments are made, the lip does not draw or become narrowed, but the normal width is produced.

Dr. Collis' rules for his operation are six in number, viz:

1. Never interfere with the true frenum.
2. Divide all false frena and dissect up freely the alar cartilage if displaced.
3. Do not close the fissure until the intermaxillary bone is in its proper place.
4. Preserve and utilize all parings.
5. Use interrupted sutures and discard pins so far as possible.
6. Leave line of union exposed, using no dressings or plasters for some days.

The operation upon the intermaxillary bone, whatever it may be, must be done previously to this closure of the fissure, as it can be more readily managed at that time, and the line of union will not be stretched over the projecting prominence. The preservation of all the tissues and making them serviceable, is really the distinctive characteristic of this operation, and the one which calls for the greatest commendation, as it is by this means that the thickness as well as the depth of the natural lip is obtained and the notch avoided. The plan of using interrupted sutures is not new, but has been advocated and practiced in this operation for two hundred years. It is now the favorite mode, as it leaves less mark than hare lip pins. The materials most in favor at the present time are catgut, horse hair and virgin silver. Dr. Collis recommends a pin to be used at the upper part of the fissure in cases where there has been much retraction of the alar cartilage. Hainsby's truss, an elastic cheek compressor, may be used when occasion requires it, as with refractory children or with infants much given to crying. Many surgeons will not readily be disposed to give up the staying advantages derived from straps of plaster, particularly where there is any strain upon the sutures. Dr. Collis usually defers them, when used at all, until the removal of the sutures or until the case apparently requires them, preferring to leave the incised line exposed.

The deformity of which we have been speaking is not unfrequently met with in surgical practice, and the unsuccessful attempts at proper restoration are observed by the profession and the community at large every day. It depends upon a want of complete development of the fœtus in an early period of its existence. M. Boussin (1841) concluded from Meckel's embryogenic studies, which show that the mouth, nostrils and anus are opened and formed by absorption, that the same organic action produces labial and palatal fissures. It is now known from the more recent investigations of physiologists that it does not depend upon too great absorption of material, but upon a want of sufficient development and union of the superior maxillary and intermaxillary processes. The intermaxillary process coming down from the frontal region and the superior maxillary process coming laterally, locate the fissure upon one or other side of the mesial line, or upon both sides, making in the latter case double hare lip. A very rare form has been observed by Dr. Jeffries Wyman, where the fissure was inter-intermaxillary.

To a certain extent this deformity appears to be hereditary, though by no means in a majority of instances. It is also more frequently observed in the children of strumous parentage than among those suffering from no cachexia or constitutional dyscrasia. In by far the larger number of cases, hare lip consists of a simple fissure or insufficiency of soft parts upon one or other side of the mesial line, usually upon the left. Why upon the left, unless it is on account of being further removed from the central organ of circulation, it is difficult to say. In a lesser number of cases a cleft in the palate is also observed, extending through both the soft and hard palate. In a still less number, there is a fissure upon either side of the mesial line and true frenum, with or without a fissured palate, and usually with a middle portion of lip depending from the septum nasi and intermaxillary bone. The lower lip is very rarely found fissured, as the tendency of the segments of the lower jaw to unite firmly and early is quite strong. When this deformity does exist the saliva is not retained and the digestive system suffers, the patient becoming dyspeptic and emaciated.

M. Louis made the important observation that hare lip must not be regarded as a loss of substance in most cases, but the walls of the fissure are separated by muscular retraction. This should not be lost sight of in planning an operation for overcoming the deformity.

On looking into the history of this subject it will be found that until within comparatively a few years little or no change has been made in the method of operating for its relief. The ancients regarded the cases of double fissure as beyond remedy, and the plan for the relief of this exaggerated form was first directed by Dr. Laurence Heister, F. R. S., a celebrated German surgeon and a professor at Helmstadt, also the author of the great surgical work of his time (1718).

From the earliest times, efforts have been directed toward remedying fissure of the lip, as well for improving the expression of the face as for permitting the more distinct articulation of words. More latterly, the additional object of bettering the conditions for the healthy nutrition of the infant has been taken into the account. The ancients deferred operating until the fifth or sixth year, probably for the reason that their preparatory as well as subsequent treatment was of too severe a character for a more tender age. Heister, *op. cit.*, recommends the early age of from three to six months, not from any physiological consideration of the infant, but for the purposes of preventing maternal impressions affecting subsequent offspring, as well as to prevent the infant from falling into the hands of quacks and mountebanks, as they would do if the regular profession insisted upon waiting.

Sir Astley Cooper, Robert Liston, Sir Wm. Ferguson, and others, recommend a later period than Heister, or from sixteen months to two and one-half years. Ferguson, however, says that it is usually a safe operation at all periods of life. Cooper and Liston were afraid of inducing convulsions at an earlier age than that mentioned, and also feared that the result would not be as perfect as when the jaw had become rounded out with a full set of teeth. Houston, of Dublin, Dupuytren and Velpeau, all recommended the third month. M. Guersent was of the opinion that the best time is within the first fifteen days. Roux approved early operating, save in simple cases and when the infant was strong. Prof. Paul Dubois made the age the subject of a communication to the *Académie*, recommending the operation within one or more days after the birth, in order to allow the infant to nurse. If weakly, the child was to be fed until its strength would warrant the operation.

Dr. Anselon and M. Bonfils, of Nancy, favored early operations, believing that convulsions were more apt to occur when the child was cutting teeth. Some have been of the opinion that the tissues of the new-born infant were too tender for sutures, experience, however, has proved that this is not the case.

Dr. Mason Warren, of Boston, published in 1848 a paper confirmatory of his former recommendations that infants should undergo this operation at as early an age as possible. He frequently resorted to it twenty-four hours after the birth of the child, and with better success than with older children. The advocates of the early operation certainly seem to have the weight of authority in their favor, and from every point of view their reasons seem to be the stronger. The nutrition of the infant is improved, the projecting portions of intermaxillary bone are developed in normal position, the nose does not grow in the flattened and broad shape into which the widely attached ala nasi draws it, the central superior incisors are cut in their true position; the fissure of the hard palate, if one exists, will not be as wide at the end of two or three years as it otherwise would be; the articulation will not have to be corrected, which correction is always difficult, and in delayed and exaggerated cases, sometimes impossible; the child will be spared much mortification at the most sensitive period of its life, and the possibly beautiful outlines of its natural disposition and character will not run the risk of becoming warped by the mimicry and mockery of its companions. The notch, which is almost invariably left after operations, and which shows the crown of one or more incisors and gives a disagreeable grin to the expression of the individual, has always been the great defect in any and all operations that have been tried, until we came down to Malgaigne (1844).

It is true that at the present time nineteen-twentieths of all operations for hare lip are not different in any respect from those made in the time of Heister, and may be for hundreds of years anterior to him. Malgaigne made the first successful attempt at overcoming this great defect. He did this by cutting his flaps in the usual way on either side until he came to the carmine border of the lip, when he turned the flaps down and united them by sutures after the same manner as the upper portion of the incision, paring off from the projecting point as much as he desired, allowing for contraction of the cicatrix in the line of fissure. It is very strange that this first and great modification did not become more generally adopted. Dr. Samuel Smith, of Leeds, England, 1846, cut as usual to the red border on the longer side, and then almost at a right angle toward the mesial line, turning over into that space the flap from the lesser side, and succeeded in making a border of more than usual symmetry.

Dr. Collis mentions the fact that he obtained his first ideas of his improved method of operation from Dr. Samuel Smith, who said he had at that time (1846?) operated in a similar manner for twenty years, although he did not publish it before the year mentioned, or two years after Malgaigne's plan had been given to the world in print.

In their vain attempts to fill up the notch, some have suggested cutting the edges in a concave manner, hoping that the border would thus be pushed down at the line of incision. All bony projections are also now, in the majority of instances erroneously cut away, and in double fissure the central flap of lip is not unfrequently sacrificed, the operator being unaware of its usefulness and of its absolute necessity for a perfect outline. It is needless to remark that at the present time these errors are committed only by those who have not studied the first principles of plastic surgery. Serious objections oppose the removal of any portion of either the soft or hard parts involved in this deformity, where already there is, in the large majority of cases, an insufficiency of material. In the times of Sir Astley Cooper and Desault we find endeavors made by some, and successfully too, to preserve the intermaxillary bone and incisors by removing, if necessary, a triangular piece from the vomer, or by the gradual pressure of a truss applied for two or three weeks previous to the incisive operation. By the removal of the projecting hard parts the superior incisors would be lost, the lower jaw would overlap, and give that expression seen in very old persons. Robert Liston, it is true, cut away whatever projected, but he did not look toward the æsthetical effect, and his course was exceptional even in his times among the best surgeons.

Previously to the new operation of Dr. Collis, Malgaigne's, with that of Smith of Leeds, are the only two worth referring to as being at all successful in limiting or overcoming the labial border notch; but neither of these prevented a nasal notch, nor did they supply the requisite thickness to the lip at the cicatricial line which, next to filling the notch, is the most important condition to be observed. The new plan of Dr. Collis, in some respects simply a modification of Malgaigne's, and Smith's of Leeds, and yet in many respects entirely new, overcomes all these defects. It has been the result of so much observation and study, and embraces so many sound principles, and, withal, is so completely successful, that it may well be called the æsthetical treatment for hare lip, and leaves nothing further to be desired in that direction. It avoids the notch, produces the Cupid's bow or normal outline, furnishes the requisite thickness to the lip at the line of cicatrix, makes a floor for the nostril, draws into place the spreading ala nasi, renders the nose prominent, preserves the incisors and intermaxillary bone, and gives an agreeable expression to the profile and full face, so far at least as the nose and lips are capable of doing so.

THE PROPER METHOD OF USING A BARREL IN RESUSCITATING PERSONS ASPHYXIATED BY DROWNING, ILLUSTRATED BY A CASE.

By J. H. Beech, M. D., Coldwater, Mich.

The fact that uneducated or inconsiderate persons continue to make improper and dangerous use of a barrel in the cases above named, suggests the utility of the following:

I was once traveling upon a "line boat" on the Erie canal, when a man, who must have weighed nearly 200 pounds, was accidentally knocked into the water where it was very deep and wide, owing to the ingress of a small creek. After making a few very awkward efforts to swim, he sank at considerable distance from either bank, and before he could be reached and raised by the only expert diver present, so much time had been lost that his resuscitation was thought to be impossible by nearly every one.

Our captain was a very small man, but every inch a captain, and was at the right spot on the "tow-path" when the body was hauled out. The body was lying nearly upon the face, when the captain seized the elbows and tried to raise it directly upward, but Lilliput might as well have lifted at the "Cardiff giant." Calling for a barrel from the boat, he ordered a man to take one arm while himself seized the other by locking the elbow over his own, or his elbow in the axilla of the patient, and with one hand grasped in the hair, by which he kept the head well elevated, the patient's breast was brought upon the barrel and the body drawn forward till the thighs came against the rolling barrel; then, directing others to carry the feet backwards, the body was allowed to ride from pubis to clavicles upon the rolling barrel. These motions were several times repeated slowly and carefully. An interval of rest upon the ground was then allowed, in which time the boots and socks were removed, the limbs rubbed, the hands slapped violently, and the feet whipped with some weeds, which the captain pulled near by. In a short time the same method of rolling on the barrel, the captain insisting on holding up the head by the hair; another rest in horizontal position upon the right side, with the slapping of hands, friction to limbs and switching the feet. A third fore and aft ride upon the barrel brought voluntary respiratory efforts, and an ordinary devout expletive from the captain, with the declaration that it was enough of that. Some citizens having now arrived, the captain ordered him to be taken to a bed and "warmed up d—d good," and the boat moved on. The accident happened about 9 o'clock A. M., and the success of the treatment was proven by our drowned passenger overtaking us on foot about 5 P. M., declaring that he "was never so tired and hungry in his life."

The weight of the patient in this case would have rendered either Marshall Hall's, Sylvester's or Bain's methods very imperfect, and I have never doubted that the barrel so skillfully used restored that man to life.

DETROIT ACADEMY OF MEDICINE.

FEBRUARY 8, 1870.

Dr. Inglis, the President, occupied the chair.

Dr. Book read a paper relating to foreign hospitals.

Dr. Andrews then read a paper on the fevers of this vicinity, which are usually called typhoid. Discussion followed upon the subject of Dr. Andrews' paper (published elsewhere).

Dr. Jenks—In September and October last an unusual number of these cases of fever occurred in St. Mary's Hospital, upward of forty cases in the female wards. Most of these cases had constipation, followed by diarrhœa in the third week. The stools were unusually offensive. One case appeared to resemble typhus. The abdomen was flat, with no tenderness, and a very foul odor emanated from the body. This case died shortly after admission. The treatment was expectant and supporting.

Dr. Gilbert—My experience has resembled that of Dr. Andrews. I have had many cases whose symptoms resembled those of typhoid fever. Quinine, in these cases, does not seem to be well borne, even when the symptoms are intermittent in their character. Where obstinate constipation exists, quinine seems to be especially objectionable.

Dr. Gilmartin—I am of the opinion that in cerebral cases quinine may possibly be detrimental, but have never seen it do harm. I have only met with one or two cases in Detroit that appeared to be like the typhoid fever of the Eastern States. The peculiar dysenteric symptoms are wanting.

Dr. Bigelow—I think that mild mercurials are advisable in these cases, especially at the commencement of the disease. These should not be ignored.

Dr. Noyes—The typhoid fever of New England appears certainly quite different from that observed in this climate. I have practiced there many years and been conversant with the several varieties of fever and their differences. The fever which goes by the name of typhoid here has generally an intermittent type. It is to be regretted that so few *post-mortems* are held, so that if it be true that the lesion of Peyer's patches is as characteristic as the eruption in small-pox, it may be certainly known. In the typhoid fever, as seen at the East, this characteristic lesion is invariably observed.

Dr. Gilmartin—A case came under my treatment recently, in which the patient improved after a profuse discharge of blood from the bowels. No medicine was given for twenty-four hours after the bleeding. Dr. Armor, who saw the case in consultation with me, also regarded the discharge of blood as critical. In some cases of this sort the bleeding might doubtless cause severe prostration and end fatally.

Dr. Noyes—I believe that small hemorrhages in this disease are usually regarded as not so unfavorable.

Dr. Gilbert—I do not think that the characteristic intestinal lesion in this disease is especially important. We must be able to diagnosticate the disease from other symptoms and be guided by them in the treatment.

Dr. McGraw—The causes of these fevers are an interesting subject of study. A belt of forest will protect a family from swamp fever, and the removal of forests is said, also, to be one cause of the prevalence of typhoid. Will the cultivation of trees tend to prevent typhoid? Remittent and typhoid are really much alike, *Dr. Gustin*—An epidemic of typhoid fever occurred recently where I practiced, near the oil springs of Canada. There were more than a hundred cases in my immediate vicinity during three or four months, beginning in August. It is a new country, containing a considerable amount of lumber. The disease visited all classes in the community. There was the usual intestinal trouble, with rose colored spots, and where *post-mortem* examinations were made there was always ulceration of the bowels.

Dr. Inglis—I am much interested in this subject. I remember having cases of the disease in five or six families about the time of which Dr. Gustin speaks. They were all in the vicinity of Lafayette and Howard streets. I had no cases in any other section of the city.

Dr. Andrews—I had cases in Hamtramck about that time.

Dr. Inglis—All of my cases were children, except two young men. The streets in which they lived, though for the most part unpaved, were provided with sewers. It was a singular fact that all the patients occupied sleeping rooms on the ground floor. I think that Dr. Andrews describes two forms of fever under one head. One of these bears quinine well, but the other does not. These cases which I have described were of the latter class. Although there was a marked exacerbation of fever at some period of the day, the administration of quinine was invariably followed by unfavorable symptoms. A child, for instance, five years old, will complain of being unwell for several days. Its head hangs down and its eye is dull. It has fever, so the mother says, once or twice a day, with the face flushed and hot. There is generally intestinal trouble, and generally a lung difficulty, which comes on insidiously. Such a case will not bear quinine well at all. In all of the cases there was a slight hemorrhage from the nose, though sometimes only amounting to a few drops. My attention was called to this by another physician. In the vicinity of Niles there were a large number of cases of fever, said to be typhoid. The treatment said to have been most efficacious was that of mild mercurials at the outset, followed by alcoholic stimulants. Crisis by sweating was invariable in favorable cases. The alcohol was given without waiting for the crisis.

The name "typho-malarial fever" seems to me to be objectionable, and to lead to a want of discrimination on the part of practitioners in their treatment. Two distinct diseases are placed under this head.

Dr. Jenks—As a cause of typhoid fever, there is frequently a bad condition of the cellar under the house. Vegetables stored in cellars and allowed to decay, will obviously lead to disease.

Dr. Gilbert—Another cause is the common use of one privy by several families.

Dr. Inglis—Farmers, also, frequently suffer from the flowing of surface water from barn yards into the wells from which they obtain their drinking water. They become accustomed to the bad taste of the water and do not notice its impurities.

W. H. LATHROP, *Secretary*.

Selections.

ON SOME OF THE ADVANTAGES OF TAPPING IN THE TREATMENT OF OVARIAN TUMORS.

By George Southam, F. R. C. S. Eng., Surgeon to the Manchester Royal Infirmary.

In recording the improvements in surgery during the nineteenth century, the future historian will no doubt ascribe to the present generation the merit of having established ovariotomy as a legitimate operation. As one of its earliest advocates (Cases of Ovariotomy: *London Medical Gazette, 1843; Provincial Medical Journal, 1845; Provincial Transactions, 1847*), I naturally feel a deep interest in its success; but when I consider the high rate of mortality still attending it—admitted by the most experienced operators to be nearly one in three cases, and that the disease which it is intended to eradicate rarely destroys life for several years—I must confess that a grave responsibility attaches to the surgeon who recommends its adoption, as long as more simple means will keep the growth of the tumor in check, and the patient's general health unimpaired.

Amongst these means, tapping appears to be the chief remedy; and believing that by its aid life may frequently be prolonged, and the success of ovariotomy not only not interfered with, but actually promoted, I beg to offer a few remarks on the advantages of this simple operation, which I trust may not be unacceptable to my professional brethren.

Medical literature supplies us with a few instances where tapping has sometimes arrested the disease for so long a time that it has almost been regarded in the light of a cure. Three examples, at least, of this kind have come under my own notice; and my experience leads me to think that in cases judiciously selected the operation, if carefully performed, may be more frequently successful than is generally supposed.

In 1843, Mrs. G. of Salford, consulting me respecting the propriety of the extirpation of a tumor, from which she had been suffering about three years. She was then thirty-three years of age, married, and had four children, the youngest two years old.

In company with the late Mr. Thomas Slack, her surgeon, I made a careful examination. We found her abdomen much distended, the swelling caused apparently by fluid. As the patient was in a feeble state of health, we decided upon tapping, and drew off twenty quarts of a clear fluid of low specific gravity. The operation was followed by some constitutional disturbance, but in three weeks she seemed to have completely recovered. About twelve months afterwards, the abdominal swelling returned, and at the end of two years from the former operation the distension was so large that we had again recourse to the tapping, and removed twenty-two quarts of fluid. Her recovery was most favorable. At the end of a fortnight she was able to resume her domestic duties, and remained in a satisfactory state of health until 1864, a period of nineteen years. Since that time, however, the swelling has gradually returned, but so slowly as to occasion little or no inconvenience, until the last few months; and though the abdomen is considerably enlarged, she feels at present no necessity for operative interference. She is now in her sixtieth year, and to all appearance in better health than when she first consulted me twenty-six year ago.

In 1843, I was requested by Dr. G. C. Watson, of Chester, to visit with him Miss S. aged twenty-five, residing in Liverpool, who was suffering from an ovarian tumor, the removal of which two gentlemen, who had made this disease a specialty, had recommended. A careful examination convinced us that the tumor was a unilocular cyst; and, as the patient appeared in good health, we advised tapping. The operation was performed by Dr. Watson with a medium-sized trocar, and between five and six quarts of a semi-transparent viscid fluid removed. The patient's recovery was rapid and complete; and, at the end of five years, when I last heard of her, there had been no return of the disease; and Dr. Watson informs me that from that time he has had no reason to suppose that she has not remained perfectly well.

In July, 1867, Miss M., aged twenty-five, asked my advice respecting an ovarian tumor that had been developing itself about three years, and which she had been urged to have removed. It appeared to consist mainly of fluid contained in a single cyst, and her health was not in the least impaired. I therefore recommended her to be tapped. Six quarts of clear, viscid fluid were removed. She speedily recovered, and on a careful examination made only a short time ago, I could detect no return of the swelling.

Such favorable results as the above are only to be expected when the disease consists of one or perhaps two cysts; but, as a fair proportion of ovarian tumors assume this character, the possibility of recovery after tapping ought not to be overlooked in their treatment. It must, however, be admitted that the beneficial effects of the operation are frequently only temporary, and therefore it ought not to be undertaken if likely to hinder the successful performance of ovariotomy.

Fortunately, this evil result is not often to be apprehended; on the contrary, one or two tappings, especially when the cyst has obtained a considerable size, are usually succeeded by a marked improvement in the patient's health, and by a reduction of the original tumor, so that only a moderade incision through the abdominal parietes will be necessary for its extraction; both of which conditions are favorable to the success of the major operation.

Amongst the cases of ovariotomy that have come under my notice, several have been those of patients in comparatively good health, where the tumors were of recent formation, of moderate size, and free from adhesions, and the operation itself, therefore, of the simplest description; but the results have not been so satisfactory as in cases of longer standing, and of a more complicated character—acute peritonitis being usually the cause of death in the former, shock and its consequences in the latter. The tendency of the peritoneum, therefore, to inflammatory action seems to diminish with the duration of the disease, probably on account of the continued friction of this membrane against the surface of the cyst diminishing its sensitiveness.

Accordingly, in the earlier stages of the disease, whether the tumor consisted of single or of multilocular cysts, it has for some time been my custom to advise a postponement of ovariotomy; tapping the tumor once or twice when it has become inconveniently large. Since adopting this plan, I have removed seven diseased ovaries, and in only one case was the operation fatal. Five of the patients had been tapped once, one twice, and one three times, the fatal case being among the first five. The recovery of those tapped only once was the most rapid, although in three of them the tumors were multilocular cysts. The two tapped more than once made favorable progress; but their complete restoration was not accomplished for several weeks, owing probably to the fluid in the cysts having become purulent after the second operation in one, and after the third in the other. Suppuration of the cyst I have not unfrequently found to be the consequence of repeated tappings; and, therefore, it is a matter of doubt whether the operation should be undertaken more than once or twice, as its repetition may diminish the chance of successful ovariotomy. The experience of Mr. Spencer Wells is also favorable to a preliminary tapping, for he found that, whilst the average mortality in 135 cases, where the patients had never been tapped, was 27.40 per cent, where the patients had been tapped once the mortality was only 25.64 per cent. (Proceedings of the Royal Medical and Chirurgical Society, 1869.)

It is scarcely necessary to dwell on the advantages of tapping in clearing up any doubtful points in the diagnosis of abdominal tumors; for no one, I think, would resort to extirpation in such cases until he had first ascertained the nature and connections of the disease, for which purpose tapping has not unfrequently been found most useful.

In offering these remarks on the tapping of ovarian cysts, I must not omit to notice the mode of performing the operation, especially as, when ovariotomy was in its infancy, I first called attention to the dangers which attended its performance (*London Medical Gazette, 1843*).

It was then the custom to use a full-sized trocar; the patient was seated on a chair, and, to insure the complete expulsion of the contents of the cyst, the abdomen was compressed with towels by the operator's assistants. Additional force was also often applied by pressing the abdomen with the hands, whereby considerable violence was sometimes inflicted on the peritoneum and the contents of the abdomen, which, with the frequent entrance of air through the trocar into the cyst, often led either to inflammation of its walls or of the peritoneum.

The present mode of operation is comparatively free from these dangers. The patient is allowed to recline in bed or on a couch. A small-sized trocar with a stop-cock is employed, to which is attached a long piece of elastic tubing for conveying the fluid to a utensil placed near the patient, which tubing, when used on the principle of the siphon, as recommended by my colleague, Dr. Roberts, excludes all air from the cyst. The fluid, by this means, is removed very slowly, and thus faintness is prevented, whilst the gradual contraction of the cyst and abdominal parietes renders it unnecessary either to press the abdomen with bandages or with the hands, and the risk of peritoneal inflammation is lessened. By attending to these precautions, tapping, which was formerly often accompanied with considerable danger, has become one of the simplest and safest operations in surgery.—*Lancet.*

Prof. Jellett has been appointed President of the Royal Irish Academy, in the place of Lord Talbot de Malahide.

THE THERAPEUTICAL VALUE OF THE SULPHITES.

By J. W. Miller, M. D.

After recording a series of cases of typhus, eight hundred and eighty-four in number, and which were treated part with and part without the sulphites, showing no benefit whatever from their use, Dr. Miller adds:

Having seen the inutility of the sulphites in the treatment of typhus fever, I have not made any trial of them in the treatment of the other exanthemata. There remains, however, a class of diseases in which, I believe, they have been proved to possess great value—I mean cases of purulent infection, or septicæmia. In midwifery practice, for instance, such cases are common enough. We have cases of abortion, in which the ovum is imperfectly expelled, and in which portions of the placenta are left adherent to the uterus, which shortly become putrid. In such cases the most serious consequences frequently ensue from the absorption into the blood of the putrescent material. In cases of adherent placenta, likewise, at the full term, the same peril is present. Under such circumstances we possess, I believe, in the sulphites a very effectual means of reducing the danger to a minimum. I have had several such opportunities in practice of testing the power of the sulphites, and with the most satisfactory results. One very marked case occurred to me within the last few weeks. After a very protracted and difficult case of labor, in which the child was hydrocephalic, the head requiring to be opened before delivery was affected, the placenta was found to be adherent. It required to be scraped from the uterus over its whole extent by the fingers, and doubtless numerous small fragments were unavoidably left here and there adherent, as was partly proved by the occurrence, a few days later, of considerable hemorrhage, which was arrested by means of ergot. The woman lost much blood before the extraction of the placenta, was much exhausted by the long labor, and the uterus contracted very imperfectly. The discharges soon became putrid, and the patient was just in the condition to favor the absorption of the putrescent fluids by the uterine vessels. I put her at once under treatment by half drachm doses of the sulphite of magnesia every fourth hour. For a few days she was in a high fever, but nevertheless she made a rapid and complete recovery, and was able to walk out of doors within three weeks after her delivery. Several other similar cases have occurred to me, to give the details of which, however, would be of little use. They were either cases of delivery at the full time, in which, from retention in the uterus of coagula of blood, or of fragments of the placenta, the lochia became putrid; or cases of abortion, in which the placenta came away piecemeal, and in which, under the employment of the sulphite of magnesia, the constitutional symptoms were either slight or entirely absent. To be of any avail, I believe the remedy must be given in considerable doses, from half a drachm to a drachm every fourth or sixth hour, and, still more, that its use must be commenced early in the case, either before or immediately on the appearance of the constitutional symptoms. In one case of abortion in which the sulphite was not given until after the development of symptoms of blood-poisoning it had not the slightest effect in mitigating the course of the disease, and the case ended fatally.—*Edinburgh Medical Journal.*

DANGER OF INJECTIONS OF PERCHLORIDE OF IRON IN SANGUINEOUS TUMORS.

A CHILD ten weeks old, having three sanguineous tumors respectively on left cheek, left leg, and right lumbar region, was brought to Prof. Sautesson, of Stockholm. While in the country, the child had been for two weeks in charge of a physician, who was prevented from vaccinating the tumor on the face by want of virus, and instead applied collodion, but this produced no change.

The tumors were beneath the skin and evidently still growing. That on the face, the one of greatest importance, was an inch in diameter and occupied more than half the thickness of the cheek, being situated midway on a line drawn from the ala nasi to the lobule of the ear. Vaccination not promising any hope of success, and such procedures as excision, ligation and cauterization presenting serious objections, the choice was limited to acupuncture by galvanic needle, and injection of a coagulating liquid. The latter was preferred by the professor, and immediately, with the assistance of Prof. Abelin and Dr. Schlerg, the injection of a liquid, composed of ferri perchloridi six parts, and alcohol one part, was commenced. The injection was made with a subcutaneous glass syringe containing eight or ten drops of the mixture. The capillary tube was first introduced and directed vertically across the tumor, toward its centre, and only one-half of its contents injected; it was then withdrawn, and reintroduced horizontally, the point being directed deeper in the tumor. Before the second injection was completed, the operator was forced to withdraw the syringe on account of the appearance of threatening symptoms in the child. Death took place in about two hours.

Autopsy, on the day following death, revealed the following symptoms: The tumor was much lessened in size; its tissue, from being spongy, had become firm and solid from coagulation of the blood.

The surrounding veins (facial and its ramifications) were empty. The external and internal jugulars contained no clots in the superior portion, but as they approached the chest the contained blood was generally clotted. The clots became more and more firm in the subclavian, the superior vena cava, and in the right cavities of the heart. These were literally distended with coagulated blood. The left auricle contained a small clot, the left ventricle was empty. It is probable that, in introducing the tube the second time, one of the veins (perhaps a branch of the facial) was penetrated. The history of this case and its unfortunate termination suggest, as a precautionary measure against a similar occurrence, pressure between the tumor and the heart when performing the injection.—*New Orleans Journal of Medicine, from L' Union Médicale.*

THE *Gazette des Hôpitaux* gives the report of a case in which chloral was exhibited to the extent of producing perfect anæsthesia, under which amputation of the leg was performed by M. Noir. After the operation it was long before the patient recovered his sensibility, and the symptoms were most alarming; coma, succeded by delirium, vomiting and prostration.

Pharmacy.

NEURALGIC PILL.—In the January number of the New Orleans *Journal of Medicine*, Dr. Osborn, of Greensboro, Ala., publishes the following formula, which, in his practice, he has found very effectual in the relief of neuralgic affections:

℞. Zinci cyanidi	gr. vj.
Quiniæ sulphatis	gr. ix.
Morphiæ sulphatis	gr. iss.
Extracti belladonnæ	gr. iij.

M. et ft. mas. div. in pil No. vj. Sig. One pill every 6 hours till pain is relieved.

SPONGE TENTS.—An expeditious and simple mode of preparing tents, tampons, etc., of compressed sponge, is the following: Moisten the sponge thoroughly, and then having pressed out the excess of water, mold it to the required form, either with the fingers or packing in a suitable mold, and immerse immediately in strong alcohol. In a few seconds the sponge sets or hardens so as to retain its shape permanently on removal of pressure. As soon as the alcohol has evaporated it is ready for use, and as a few drops of water suffice to restore it promptly to its former size and shape, it is evident that tents prepared in this manner must act even more speedily and efficiently as dilators, than those made by the ordinary process. The new method, suggested, we believe, by Dr. Hough, of Ridgeville, O., possesses such obvious advantages that it must be received with general favor.

PREPARATION OF HYDRATE OF CHLORAL.—Leibig's process consists in passing a current of dry chlorine into absolute alcohol, which is kept cool at the commencement of the operation, but heated nearly to boiling toward the close. Eight ounces of alcohol require for saturation a continuous and rapid current of chlorine for at least twelve hours. On a larger scale, a much longer period is generally required. The crude product, which forms generally a solid crystalline mass, is purified by digestion and agitation with sulphuric acid, and subsequent distillation with quick lime. M. Thomsen, of Copenhagen, recommends neutralizing the crude product with chalk, and subjecting it to fractional distillation. The portion going over between 230° and 240° F. consists of the hydrate of chloral, and may be freed from water by re-distilling over calcium chloride. Messrs. Mueller and Paul, of Berlin, procure the hydrate in a similar manner, by a process of sublimation.

Staedler's method, as given in the *American Journal of Pharmacy* for March, is as follows: Seven parts of muriatic acid are gently heated with one part of starch, till the paste is converted into a liquid; three parts of black oxide of manganese and a little table salt are then added; the mixture is rapidly heated to boiling, when the fire is at once removed. The mass foams considerably, giving off carbonic acid, and continuing to boil for some time. After boiling ceases, heat is again applied until the distillate ceases to be rendered turbid by strong potash ley. The oily drops floating on the surface are carefully removed, the liquid saturated with table salt and distilled, the distillate being again carefully freed from an odorous sulphur yellow oil. The distillation over, table salt is repeated several times to obtain a concentrated aqueous solution of chloral, which is saturated with chloride of calcium and rectified from an oil bath, when the hydrate distils as a colorless liquid which soon congeals. On mixing the hydrate with four times its volume of sulphuric acid, chloral is separated as a colorless liquid, which is freed from muriatic acid by slow boiling. This purified chloral, mixed with water, yields the pure hydrate.

LIQUID PEPSINE.—Emil Sheffer, of Louisville, Ky., has recently conducted a series of experiments proving that the alcoholic preparation known as the wines or elixirs of pepsine do not in fact contain any pepsine at all. He found that the addition of 16 per cent of alcohol to a diluted glycerole of pepsine, precipitated its active principle completely after the lapse of a few days, and that the wine made after the most approved processes from fresh calves' or pigs' stomachs, had no digestive power whatever over albuminous substances.

The only liquid preparation in the market that has any claim to be regarded as a substitute for the gastric secretion is Hawley's liquid pepsine, three ounces of which are about equivalent to one drachm of Boudault's pepsine. Houghton's pepsine, it appears, is comparatively inert, an ounce of it being equal to about a drachm and a half of Boudault's. This result corresponds with some experiments we have ouselves made in regard to the comparative value of these preparations. Hawley's dry pepsine we believe to be little, if at all, inferior to the best French pepsine. The glycerole of pepsine, to which we called attention a few months ago, is a preparation which is easily made, possesses in a high degree the solvent properties of the gastric juice, and is not liable to change with age. Scheffer's formula is as follows:

6 pounds mucous membrane of hogs' stomach.
4 pounds glycerine.
4 pints water.
6 ounces pure hydrochloric acid.

Macerate 36 hours; place on a strainer, and when the liquid has drained, macerate again with three pints of water for two or three hours; strain, and repeat the process till ten pints of liquid are obtained. After standing a few days, a quantity of mucus separates, from which the liquid pepsine must be freed by filtration. One ounce of this preparation is equivalent to one drachm and forty grains of Boudault's French pepsine.

Editorial.

We look to the approaching convention of teachers from the the various Medical Colleges of the country for something to be devised, which shall tend towards elevating the standard of education and of the profession. Years have passed in vain efforts to accomplish this end through action by the American Medical Association. Various committees have spent time and brain power to little purpose, other than the production of voluminous reports, embodying, it is true, many good suggestions, but lacking that practical character that is needed to make any plan successful. Hitherto, the idea has been to compel the colleges to raise their standard. This is applying power at the wrong end of the lever. It is assuming that medical teachers are not men with human frailties, but abstract principles which exist solely for the good of human education, and will follow out such a course as will produce the most thoroughly learned physicians, regardless of their own success or that of the institution with which they are connected. Now, this is all wrong; professors are men to whom success, in the ordinary acceptance of the term, is dear, and of whom it is too much to ask that they shall risk all for the good of the profession, when that profession limits its efforts to help them, to wordy resolutions before various societies, but who, practically, admit the veriest ignoramuses to their offices as students, and encourage them with the hope that the medical college will take them, crude as they are, and attempt to polish them up into corner stones fit to enter into the construction of the glorious palace of science.

We do not believe that the standard will be raised until the medical men who are already in the field are profoundly impressed with the belief that upon them rests the *onus* of commencing the reform; so impressed that they will demand a change peremptorily, and prove their earnestness by the views they express to young men seeking to enter the profession; and the severity with which they frown upon the ambition of incompetent aspirants.

Medical teachers will not be backward to obey the mandate of a body of men thus alive to the needs of the hour and the world; thoroughly in earnest, realizing fully their own lack and superficiality in education, which they have been driven to overcome by study and research afterwards, at the expense, perhaps, of sad errors made and bitterly mourned, when too late. Experience has shown that a diploma does not confer wisdom and skill to meet and conquer disease. With a healthy enthusiasm general among the profession upon this great subject, teachers, cheered by hearty support, will be the foremost to take the required stand, and we shall see *graduates* of the science of medicine in the true sense of the term, men thoroughly grounded in general knowledge as well as practical acquaintanceship with the phenomena of disease.

Among the agents in urging forward this question of reform in education, the medical press will prove the most powerful, and it has a high duty to perform. The subject should be continually pressed and its importance presented in the various lights in which it bears upon the public welfare. Medical colleges, also, while they cannot alone accomplish the work, yet should lead the way, maintaining a position in the van of every forward movement; and especially by inculcating in all graduates sound principles, and rendering the curriculum as thorough and practical as possible, reinforce the profession with good material, and gradually elevate the general tone.

DETROIT MEDICAL COLLEGE.

THE regular spring term opened according to announcement on the 1st of March. The introductory address was delivered by

Dr. C. B. Gilbert. The friends of the institution will be gratified to learn that the class in attendance this year is considerably larger than the last. It is still the aim of the instructors in this school to give a practical turn to the teaching in each department.

A new amphitheatre has been built at St. Mary's Hospital to accommodate the increasing number of students, and enable them the better to profit by the clinical material the hospital affords.

The candidates for graduation this term constitute a smaller proportion of the class than last year—a sign of healthy growth.

AMERICAN MEDICAL ASSOCIATION.

Office of Permanent Secretary, WM. B. ATKINSON, M. D.,
1400 Pine Street, S. W. cor. Broad, Philadelphia.

The Twenty-first Annual Session will be held in Washington, D. C., May 3, 1870, at 11 A. M.

The following Committees are expected to report:

On Cultivation of the Cinchona Tree—Dr. Lemuel J. Deal, Pennsylvania, Chairman.

On the Cryptogamic Origin of Disease with special reference to recent microscopic investigations on that subject—Dr. Edward Curtis, U. S. A., Chairman.

On the Doctrine of Force, Physical and Vital—Dr. John Waters, Missouri, Chairman.

On Variola—Dr. Joseph Jones, Louisiana, Chairman.

On the Relative Advantages of Syme's and Pirogoff's mode of Amputating at the Ankle—Dr. G. A. Otis, U. S. A., Chairman.

On a National Medical School—Dr. F. G. Smith, Pennsylvania, Chairman.

On Commissioners to aid in Trials involving Scientific Testimony—Dr. John Ordronaux, N. Y., Chairman.

On the Climatology and Epidemics of Maine—Dr. J. C. Weston; New Hampshire, Dr. P. A. Stackpole; Vermont, Dr. Henry Janes; Massachusetts, Dr. H. I. Bowditch; Rhode Island, Dr. C. W. Parsons; Connecticut, Dr. E. K. Hunt; New York, Dr. W.

F. Thoms; New Jersey, Dr. Ezra M. Hunt; Pennsylvania, Dr. D. F. Condie; Maryland, Dr. O. S. Mahon; Georgia, Dr. Juriah Harriss; Missouri, Dr. Geo. Engleman; Alabama, Dr. R. F. Michel; Texas, Dr. T. J. Heard; Illinois, Dr. R. C. Hamil; Indiana, Dr. J. F. Hibberd; District of Columbia, Dr. T. Antisell; Iowa, Dr. J. C. Hughes; Michigan, Dr. Abm. Sager; Ohio, Dr. T. L. Neal; California, Dr. F. W. Hatch; Tennessee, Dr. B. W. Avent; West Virginia, Dr. E. A. Hildreth; Minnesota, Dr. Samuel Willey; Virginia, Dr. W. O. Owen; Delaware, Dr. L. B. Bush; Arkansas, Dr. G. W. Lawrence; Mississippi, Dr. W. Compton; Louisiana, Dr. L. T. Pimm; Wisconsin, Dr. J. K. Bartlett; Kentucky, Dr. J. D. Jackson.

On Veterinary Colleges—Dr. Thomas Antisell, D. C., Chairman.

On Medical Ethics—Dr. Lewis A. Sayre, N. Y., Chairman.

On American Medical Necrology—Dr. C. C. Cox, Maryland, Chairman.

To Memorialize State Medical Societies—Dr. N. S. Davis, Illinois, Chairman.

On Nomenclature of Diseases—Dr. F. G. Smith, Pennsylvania, Chairman.

On Medical Education—Dr. T. G. Richardson, Louisiana, Chairman.

On Medical Literature—Dr. J. J. Woodward, U. S. A., Chairman.

On Prize Essays—Dr. Grafton Tyler, D. C., Chairman.

Voluntary communications will be presented by—

Dr. John Curwen, Pennsylvania, on the Proper Treatment of the Insane.

Dr. Nathan Allen, Massachusetts, on the Physiological Laws of Human Increase.

Secretaries of all medical organization are requested to forward lists of their delegates as soon as elected, to the Permanent Secretary.

Any respectable physician who may desire to attend, but cannot do so as a delegate, may be made a *member by invitation*, upon the recommendation of the Committee of Arrangements.

W. B. ATKINSON.

OBITUARY.

DIED of pneumonia, at his residence in Battle Creek, on the 15th March, William M. Campbell, M. D., aged sixty years and six months. The subject of this notice was born in Chitenango, Madison County, New York, September 15, 1809. He commenced, in the year 1832, the study of medicine, with Dr. Laughlin, of Memphis, near his father's residence, and afterward studied in the office of his oldest brother, Dr. C. Campbell, of Wayne County, New York.

He attended the college of Physicians and Surgeons, at Fairfield, New York, for three successive terms, and graduated with high honors at that institution in January, 1836.

The following spring he emigrated to Rootstown, Ohio, and commenced the practice of his profession in company with Dr. Bassett. Disliking his location, he left Ohio, came to Battle Creek, then containing but a little more than one hundred inhabitants, on the 7th of March, 1837, and commenced at once the practice of medicine. During the sickly season of 1838, when one or more of every family was prostrated by malarial fevers, he was the only practicing physician between Marshall and Galesburgh, riding night and day his Indian pony through the forests, guided by marked trees, for many miles in every direction, visiting the log cabins of the pioneers, and administering to the sick. The "Little Doctor" soon acquired the reputation of an active, energetic and skillful practioner. At the suggestion of his brother, Dr. C. Campbell, he entered into partnership with Dr. Cox, in 1839, and continued associated with him for nearly twenty years, and, with the exception of one year spent in the Military Hospitals at Washington, during the late war, he continued the practice of his profession in this city until the week before his death.

He liked scientific investigations, and for fourteen years made meteorological observations for, and monthly reports to, the Smithsonian Institute at Washington, and in its reports may be found the reports of his observations. He was an honorary member of the American Scientific Association. He was the first physician that permanently located at Battle Creek, and at the time of his death had practiced in this county longer than any physician with one exception.

REVIEWS AND BOOK NOTICES.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. By J. Forsyth Meigs, M. D., and Wm. Pepper, M. D. Fourth edition, revised and greatly enlarged. Published by Lindsay & Blakiston, Philadelphia. 1870. Pp. 920.

This volume forms the most complete and comprehensive work upon the diseases of children published in this country. It has for years been one of the standard authorities, and in its present enlarged form will still more command attention. It presents the latest views of pathology and treatment and takes into consideration many subjects which were entirely omitted in the previous edition. A commendable feature is the candor with which the authors acknowledge their change of views in regard to the treatment of many diseases; blood-letting and the exhibition of calomel and antimony in the doses and for the length of time formerly thought advisable, are now unhesitatingly condemned and the reasons for the change in opinion fully given. In the treatment of pneumonia and pleuritis, however, we think ten years more will find the authors holding the same ground upon blood-letting that they now do in regard to its value in bronchitis, *i. e.*, almost universally condemning it. They cite the records of fifty-three cases treated, with two deaths, a favorable showing, indeed. In eighteen cases depletion was resorted to. Still the per centage of recoveries is not as large as recorded by other authors where blood-letting was far less frequently employed.

The section devoted to diseases of the nervous system is particularly full, and we were much interested in the remarks upon eclampsia and laryngismus stridulus.

We cannot agree with the authors in recommending caustic applications to the throat in diphtheria; we regard their use at this day, as injudicious, to say the least. West, in his last edition also gives his testimony as decidedly against such violent applications.

Generally the book is to be highly commended, and for the views with which we take issue the writers have a right to their own opinions.

For sale in Detroit by E. B. Smith & Co.

TANNER'S CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS, a Manual for Students and Practitioners. Third American, from the second English edition. Revised and enlarged, by Tilbury Fox, M. D. London. Published by Henry C. Lea, Philadelphia. 1870.

A very useful little volume, containing a vast amount in small space and arranged for ready reference. While we do not value this class of works very highly, yet they are often convenient, and if they do not lead to too little self-reliance they are not objectionable.

THE CELL DOCTRINE; Its History and Present State. Also a copious Bibliography of the subject. By James Tyson, M. D., Lecturer on the Microscope in the University of Pennsylvania, etc. With a colored plate and other illustrations. Philadelphia: Lindsay & Blakiston. 1870.

The author has conferred a great favor upon the profession in issuing this monograph. Comparatively few medical men have access to libraries which contain a full bibliography upon the various views propounded for the solution of the mysteries of organic growth, or have the time to search the periodicals for what is being done at present. Dr. Tyson has condensed into a few pages all that is important in relation to the history of the subject, glancing at the labors and theories of early physiologists, but giving the larger portion of the space to a consideration of the views enunciated by Dr. Lionel Beale, of London, and Prof. Huxley. Messrs. Lindsay and Blakiston have issued the work in their very best style.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION at the Seventeenth Annual Meeting, held in Chicago, Ill., September, 1869. Philadelphia: Merrihew & Son. Pp. 468; 8vo.

The present volume of the "Proceedings" has made its appearance promptly, considering the labor involved in arranging and preparing for the press such an amount of material. The minutes of the meeting are given in full, as reported by Mr. Slade, of Boston, and form not the least interesting portion of the volume. The report on the progress of pharmacy occupies over

150 pages, and does credit to the chairman of the committee, Dr. Frederick Hoffmann, of New York. The pharmaceutical and chemical journals of both countries have been ransacked for the materials for this elaborate and exhaustive report, which is alone well worth the price of the entire volume. The Committee on Specimens report an unusually fine exhibition of drugs, pharmaceutical preparations, apparatus, etc., and recommend that at future meetings of the Association a special time be set apart for examination of the specimens on exhibition. Dr. Squibb, chairman of the Committee on the Pharmacopœia, makes many excellent suggestions which, as the fruits of many years' experience, are entitled to a careful consideration on the part of those who are soon to revise the Pharmacopœia. Special and volunteer reports occupy a comparatively small space, but embrace a variety of interesting and important topics.

CHEMICAL EXAMINATION OF URINE IN DISEASE, by Austin Flint, Jr., M. D. New York: D. Appleton & Co. 1870. Pp. 75; 12mo.

This little manual is eminently practical in its aim. It gives brief and plain directions for qualitative and quantitative examinations of the urine, with reference to its most important normal and morbid constituents. It has been the effort of the author to simplify the process of analysis as far as compatible with accuracy in the results. As a guide to those who are not familiar with chemical manipulations, this little book will prove especially useful, although it can not take the place of the more complete and exhaustive treatises on the same subject, which we already possess. If it shall enable the busy practitioner, however, to make rapidly and satisfactorily all ordinary analysis of urine, it will have accomplished all that the author designed.

MODERN THERAPEUTICS. A Compendium of Recent Formulæ and Specific Therapeutical Directions. By George H. Napheys, A. M., M. D. Philadelphia: S. W. Butler, M. D. 1870. Pp. 380; 12mo.

This unpretending volume introduces the reader into the details of practical therapeutics as applied by the most eminent and successful physicians of the present day. The nosological plan of arrangement adopted is that best adapted to the needs of the young practitioner who has occasion to refer to this work, and full indices of remedies and of authors are added, to facilitate still further reference to any particular formula. The plan of treatment recommended by each authority is concisely and clearly stated; the formulæ have been judiciously selected and carefully revised, so that most of them will bear critical examination by the scholar as well as the therapeutist, and everything has been excluded that has not positive value, or, at least, the recommendation of the highest authorities.

JOURNALS AND PAMPHLETS RECEIVED.

MICHIGAN UNIVERSITY MEDICAL JOURNAL, conducted by the Faculty of the Medical Department.

The first number of this journal is before us, and presents a very creditable appearance, both as regards typography and literary material. Being under the auspices of the faculty, and professedly the organ of the school, it should not lack for good original matter.

THE BOWDOIN SCIENTIFIC REVIEW. A fortnightly journal, published at Brunswick, Maine. Edited by Profs. Brackett and Goodale.

This journal is made up of selections from foreign journals, and thus far of very good selections, too.

PROSPECTUS of the *Cotton Zone Central Journal of Medicine*, a monthly record of medicine and the collateral sciences. Edited by Abram Love, M. D., and a corps of able assistants. To be issued at Atlanta, Ga.

Gardeners' Monthly, Philadelphia. *Cultivator and Country Gentleman*, Albany. *Harper's Monthly*, *Weekly* and *Bazar*, from Harper Bros. *Atlantic Monthly*, *Every Saturday* and *Our Young Folks*, from Fields, Osgood & Co., Boston. *Putnam's Magazine*, *Wood's Household Magazine*.

DETROIT
Review of Medicine and Pharmacy.

VOL. V. MAY, 1870. No. 5.

CLEFT PALATE.

STAPHYLORAPHY—URANOPLASTY.

By J. Henry Carstens.

IN January, Prof. McGraw operated before the class of the Detroit Medical College, for cleft palate, according to Langenbeck's method. The patient, a young man, 20 years of age, suffered from congenital fissure of the hard and soft palate. The fissure of the hard palate extended through the palate bone, and measured three-fourths of an inch in length and three-fourths of an inch at its greatest breadth.

The professor called the attention of the class to the great vascularity of the parts, stating that severe lacerated wounds about the head would heal, when in other parts of the body such injuries would seem almost hopeless; and that this very vascularity, though the cause of great hemorrhage sometimes in operative procedures, made plastic operations more successful in this part of the body than elsewhere.

Professor McGraw first performed the operation of uranoplasty according to the method described in the following translation of Langenbeck's article, and then that of staphyloraphy. Between the two operations there was an interval of one week. The patient was kept perfectly quiet for some days, and was not allowed to speak nor to eat solid food. This is absolutely necessary to the success of the operation. Two weeks after the last operation the young man left the hospital. Union had taken place by first intention, and only a very small opening, one line in diameter, remained at the anterior angle. It was noticed by all who heard him speak before and after the operation, that his articulation had already somewhat improved.

Thinking it of interest, perhaps, to the readers of the *Review* I take this occasion to write a few words about this most difficult of surgical operations; an operation most trying to the surgeon—one which requires from one to two hours to complete—and which is most painful to the patient, on account of its being impossible to give an anæsthetic.

Staphyloraphy, an operation to close the fissure of the soft palate, has been performed for a number of years, with more or less success, and is too well known to require description.

Ph. J. Roux was the first who operated successfully for acquired defect of the hard palate, in 1831, and established a distinct operation in surgery by transplanting flaps of mucous membrane. (*Quarante années de Pratique Chirurg*, 1854.) The plan originally practiced by Roux has been variously modified by Warren, Field, Dieffenbach, Baizeau, and others. It seems strange that the success of Roux (recovery of three of his four patients) should not have removed the unfavorable impression of the French surgeons of the last twenty years, in regard to this operation.

Krimer operated successfully for congenital cleft of the hard palate, it is claimed, in 1824, causing the greatest astonishment in the surgical world. Velpeau's trial in 1839 was unsuccessful, although Pancoast, of Philadelphia, in 1840, lessened a syphilitic perforation one half. (*Med. Ex. and Rec., 1844.*)

To Langenbeck, of Berlin, is undoubtedly due the merit of establishing *uranoplasty* as a distinct surgical operation. Of his description I have made the following translation:

"Three different operative processes may be made use of. *First*, the edges of the fissure in the hard palate may be horizontal. In this case, by an incision deep into the bone on each side, close to the teeth, commencing at the incisors and diverging to the velum pendulum palati, I form two muco-periosteal flaps, which are, by means of an elevator and scalpel, loosened and stripped off the bone, by commencing at the alveolar process on each side, and cutting inwards. These muco-periosteal flaps, which are to be glided towards the median line, represent the whole involucrum palati duri, and the bony palate is thus completely denuded of periosteum. Each of these flaps, however, remains attached by a strip three to four lines wide, behind the incisor teeth (anterior nutrient bridge), and at the velum (posterior nutrient bridge). These incisions are nearly the same as those made by Dieffenbach, Field, and Baizeau for the construction of their flaps of mucous membrane. Should the cleft in the hard palate be incomplete, these incisions are not to be carried farther forward than is necessary to secure the movability of the flaps, that the same may be secured in the median line.

Second—If one edge of the cleft in the hard palate is horizontal, and the other edge rises vertically on the vomer and into the nasal cavity, the horizontal half may be operated on as described in No. 1; but the other half requires a different operation. We must then make an incision in the muco-periosteal covering, where it joins the mucous membrane of the nose, viz: at the boundary line of the vertically rising palatine process with the vomer, the whole length of the cleft, from the velum forward to the teeth, and then we must loosen the whole covering, from the commencement of the incision to the inner side of the alveolar process. During this very tiresome operation the operator sits before the widely opened mouth of the patient (whose head is at the same time pressed backward), and uses the instruments with the right hand, if the right half the palate is the perpendicular; with the left hand if the opposite is the case. The covering of the palate which has been separated in this manner, then takes a horizontal position, forming a kind of curtain, which is attached externally the whole length of the alveolar process to the gums, and behind to the velum, and can now be accurately united with the flap of the opposite side.

Third—If the edges of the cleft of both sides rise vertical, with great width of fissure, the operation is the same on both sides, as described in No. 2. To avoid having the two flaps, which are only attached anteriorly to the gums, and posteriorly to the velum pendulum palati, follow the law of gravitation, and when taking the horizontal position, sink too deep, it is advisable to attach the same at several points to the vomer. To accomplish this, the whole under surface of the vomer must be denuded of a very thin slice of mucous membrane. The stitches which shall fix the curtain-like flaps to the vomer, are brought, after passing through the left flap, through the remaining submucous fascia and periosteum of the vomer, and then through the right flap. If the soft covering of the vomer does not offer sufficient support for the stitches, and it is feared the same may tear, one of the sutures, the middle, must pass through the bony substance of the vomer itself, by puncturing the bony vertical septum of the nose with the needle, or in adults with a stronger instrument, Three such sutures ought to be enough in all cases, although generally one is sufficient. By tying the sutures, not only the flaps are brought in apposition but also their denuded surfaces are brought in contact with the denuded surface of the vomer, effectually preventing the flaps from sinking too low. If the vomer occupies a very high position it will be impossible to bring the denuded surfaces together; still, it is necessary that the vomer be the fixing point of the flaps. Instead of the last described proceeding, the operation No. 1 may be used; but in this case we can not expect to close the anterior angle of the cleft, which will require a second operation.

I can, in the present state of my experience, think of no form of congenital cleft palate in which either one or the other of the above described procedures would not suffice. In acquired defects of the palate, however, other proceedings may be necessary, and we may be required to transplant from one of the palatine or the alveolar processes.

The hemorrhage, during the operation of uranoplasty, is in most cases considerable, sometimes even so strong and sudden as to frighten the operator. The art. palatinæ which ramifies in the periosteum, and must be cut in the incisions before described, is of such size that we have often seen streams of blood the thickness of a quill. As we are, however, always able to control the bleeding by ice water injections, I have never seen great prostration follow the operation. The use of ice water injections cannot be too much recommended; we now use a large 16-ounce syringe, with a nozzle turned at right angle, at the club-formed end of which are several openings. Styptics, as liquor ferri sesquichloridi, which prevent union by first intention, we have never used.*

In the majority of cases we have found the reaction following uranoplasty less than that of staphyloraphy; yet in one instance no change of the pulse was perceptible from the operation to complete recovery, and we feared that the healing process would not take place, on account of the insufficient reaction.

I do not share the apprehension expressed by some, that exposing the whole arch of the bony palate would cause necrosis or exfoliation. I never saw an instance of it. The bony palate is less easily injured than other flat bones, for instance the bones of the skull, where I found, after rhinoplasty with the use of pericranium, a necrosis like exfoliation of the lamina of the bone.

The hemorrhage from the blood vessels of the bone, which is caused by separating the periosteum, soon ceases, and we can watch the exposed bone at leisure. In a few hours we are unable to distinguish the bone, as it is covered by a thin, dry, varnish-like substance. The first observed color is changed to a yellowish gray, verging to red or reddish black. Touch the varnish-like substance and you find it dry. This remains until the seventh or eighth day, when the surface, which, however, still remains dry, gradually changes to yellow. We then notice a reddish tinge, first by small red spots that finally spread over the whole surface. The vascularity increases, and in four to six weeks complete regeneration and cicatrix is produced on the new involucrum palati. After fifteen months we saw one patient, and found the involucrum palati, although smooth and somewhat thin, still so like the normal that one who was not aware of the fact could not have told the difference. The surface was moist, the physiological appearance the same; the pathological formation of follicles has been sufficiently proven; still, I think it would require a microscopic examination to prove that mucous membrane with follicles has here been formed.

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* Liquor ferri sesquichloridi is, of all hæmostatics, the most known and used. But it must be used with care, on account of the free hydrochloric acid which the commercial article always contains. It prevents union by first intention, and often causes inflammation and gangrene.

This immunity and regenerative power of the bony arch of the palate, is equaled by the same property of the muco-periosteal covering of the involucrum palati.

The muco-periosteal flaps, which are separated in uranoplasty, do not die, although they are stretched between two currents of air in the mouth and nasal cavity, if they are only attached to parts by which they can receive a sufficient supply of blood. This immunity is due, I think, to the periosteum, which is very vascular, being taken off, together with the mucous membrane. The mucous membrane alone does not possess this power, although the fissures have been closed by several operations, always a small flap taken at a time; but flaps of mucous membrane the size of those mentioned in the above description, could not be taken without danger of gangrene.

Another evidence of the great reproductive power of the above named parts is, that in all ordinary cases, even the most complete congenital clefts of the hard palate, a new formation of bone takes place from the separated periosteum, forming a complete, solid arch. In all cases of congenital cleft palate that remained under observation more than four weeks after the operation, we have been able to prove the new formation of bone. This formation of new bone seems to commence three weeks after the operation and be complete at the end of the fourth, but consolidates more after that time. This, therefore, takes about the same length of time that is required to unite a fractured bone by first intention.

The apprehension that the newly formed bony palate may, by retrograde metamorphosis, again disappear, can now be proven without cause by numerous examples, as a fractured bone that has healed, in the course of time only gains in solidity, so the bone newly formed from periosteum only attains more compactness. As the callus in a fractured bone is slowly absorbed and disappears, so the arch of the palate, at first rough, gradually becomes smooth, the swollen cicatrices of the incisors at the sides vanish, and leave a normal appearance.

Taking the statistics of our operations as conclusive, it would not be advisable to close the soft and hard palate at one operation, viz., staphylo-uranoplasty. But as it is desirable that this very painful operation be finished at one sitting, I hope that at some future date we may be able to accomplish this successfully. At present, however, I think it advisable, especially if the patients are children, to commence with uranoplasty, and then perform staphyloraphy, the time to elapse between these operations depending on circumstances.

The opinion of Pollock that the operation of staphyloraphy should not be performed before the age of seventeen or eighteen, is based on the failure of eleven cases that were operated upon by Billroth, Passavant and others. Billroth has since operated according to my method on a child twenty-eight weeks of age, with complete success. Still, I think that although the recuperative powers of nature are great in children, it is not advisable to operate before the end of the first year.

The articulation of patients with cleft palate is of a very stuttering kind, and their speech gutteral. In several of my patients I found decided improvement in speaking, when they left the clinic five to eight weeks after the last operation, whom I had subjected to daily exercises in reading and speaking.

A systematic course of vocal gymnastics is not only beneficial but absolutely necessary, to make the operation a complete success. The words of Wutzer are to the point when he says (D. Klinik, 1850, s. 263): "The operation for cleft palate is for the improvement of speech, what tenotomy is for club foot or wry neck; it gives you an opportunity of gaining your object by a systematic course of orthopædic aftertreatment." (Langenbeck, Archiev. Klinischer Chirurgie, 1863.)

By this it will be seen that Langenbeck's method differs from all others that have been heretofore made use of, by separating the periosteum as well as the mucous membrane, and using both for plastic purposes.

Until within a few years, surgeons have generally tried to relieve this deformity of the palate by means of an apparatus called obturator. Although these obturators have been made very perfect (especially by the labors of American dental surgeons), they can never take the place of the natural bony arch. An obturator presses on the edges of the fissure, and thereby, in the course of time, causes absorption, and makes the deformity only more extensive.

In the future, no surgeon who keeps up with the advancement of his profession, will think of using such an apparatus when he can relieve his patient permanently by an operation.

IMPROVED DOVER'S POWDER—PULVIS POTASSÆ CHLORATIS, IPECACUANHÆ ET SVAPNIÆ.

By J. M. Bigelow, M. D., Professor of Botany in Detroit Medical College.

Take ipecacuanha in powder, svapnia in powder, each a drachm; chlorate of potash, an ounce; rub them together into a very fine powder. As in common Dover's powder, ten grains of this contain one grain of ipecacuanha and one grain of svapnia, which is equivalent to one grain of commercial opium of ten per cent morphiometrical strength.

The advantage derived from the substitution of svapnia for crude opium is, that the strength is uniform, whereas in opium of the best quality it varies from 7½ to 15 per cent.

It is quite obvious that the powder made from a sample of opium of 15 per cent is double, in strength of anodyne property, to that made from opium containing but 7½ per cent of morphia. It is thus seen that our Dover's powders must vary in those proportions, unless our pharmacists take the extreme pains to use only a titrated opium of uniform strength, which it is well known they can not conveniently do.

No objection can be made to the use of svapnia in this powder, inasmuch as it contains all the anodyne and soporific elements of opium, leaving out such of them as are well known to produce pernicious effects other than its legitimate narcosis.

In this preparation, the sulphate of potash, which has no medical effect, and only serves to promote the minute division and thorough intermixture of the opium and ipecacuanha in the old fashioned Dover's powder, is replaced by the chlorate of potash, which is ranked as a refrigerant, diuretic, sedative, antiseptic and silagogue.

We have the authority of Dr. Headland (Action of Medicines, p. 312), in saying that chlorate of potash is largely secreted by the salivary and mucous glands of the mouth and fauces; and yet, we have the experience of every day practice to prove that it is a universal remedy in severe mercurial salivation, cancrum oris and erysipelatous inflammations of the mouth, fauces and throat. Hence its usefulness in some forms of scarlet fever and malignant sore throats.

Its mechanical action in the trituration and admixture of the ipecacuanha and svapnia is equal to that of sulphate, while its antiseptic, diuretic and refrigerant properties prominently fulfill indications in all cases where febrile symptoms exist, no matter what form the fever may assume. But in the genuine typhoids, where inflammation or ulceration of the mucous glands are either suspected, or this pathological condition is fully pronounced and diagnosed, we know of no remedy so appropriate as the foregoing combination. It is compatible, whether diarrhœa, so commonly a concomitant, exists or not. Indeed, according to Dr. Watson, a persistence of the pea soup colored diarrhœa of typhoid fever, is almost a certain pathagnomonic symptom of ulceration of the bowels.

Dr. Headland (On the Action of Medicines), when writing of the chlorate of potash, affirms that it is "a medicine of the saline group, much employed for a remarkable power which it appears to possess, in controlling aphthous ulcerations and other superficial inflammations of the mucous surfaces of the mouth, throat and fauces (and from experience we may add of the intestines also), in which saline solutions, while passing over these surfaces, would exert upon them a slight topical action of an antiphlogistic kind. In the case of chlorate of potash, this action is kept up and continued for some time after the ingestion of the salt."

This, in part, may be accounted for from another fact, that at whatever part of the system chlorate of potash may be introduced, it very soon makes its appearance in the secretions of the muciparous buccal and salivary glands.

The chlorate of potash being a true silagogue, very probably acts by increasing the pancreatic secretion, which, both in constituency and functions, very much resembles the salivary secretion. It is in this way it also assists in the digestion of starchy and fatty matters.

If it were in place, we might here compare the effects of this agent with that of mercury, so highly lauded in the treatment of fevers by one class of physicians, and so pertinaciously decried by another.

It must be confessed, however, that in the hands of the most prudent it sometimes induces much distress and inconvenience, and even permanent injury to the constitution, so much so that the prejudices of the community are reasonably excited against it.

But in typhoid fever, in which, of all others, especially in its later stages, the expectant treatment is the most appropriate, the substitution of the chlorate of potash for mercury is a wide stride in the advance of rational medicine.

It is right here in this class of asthenic diseases, that heroic medicines and their heroic application, is almost literally a two-edged sword, as likely to cut down our patient as the disease, when it should be almost our sole object to build up and husband his waning strength by means, as Hippocrates quaintly but freely has it, which must at least *do no harm* in our endeavor to *do good.*

CASE OF ASCITES.

By A. Platt, M. D., Grand Rapids, Mich.

Mrs. R., aged 25 years; no children. She aborted, as she supposed, May, 1865, with loss of much blood, from which time her general health suffered, and during the following summer and autumn was somewhat anæmic.

In January, following, she was taken with a severe pain in the left iliac region, with circumscribed tenderness, accompanied with fever, pulse one hundred, these symptoms being subdued by treatment. In February there was discovered some distension of the lower part of her abdomen; this continued to increase. April following, her abdomen was distended to the extent of the full period of gestation, with distinct fluctuations and œdema of the lower extremities; skin moist; no thirst; menstruation normal up to January, 1867.

The case thus far having resisted all remedies used, the stomach having become very irritable, and her symptoms all so urgent, that the operation of paracentesis abdominis became necessary, and was performed January 30th, 1867, taking seven gallons of water, giving great relief. But the abdomen soon commenced filling, and the operation became necessary and was performed February 27th, and subsequently as follows: March 22d, April 13th, May 4th and 23d, June 8th and 29th, July 13th and 31st, August 6th and 30th, November 8th, December 7th, January 2d, 1868, February 3d, March 3d, April 3d, May 4th, June 8th, July 6th, August 10th, September 17th, October 27th, November 25th, December 27th, January 23d, 1869, February 20th, March 22d, April 21st, May 24th, August 13th. Total 32. The average quantity discharged was five gallons, making one hundred and fifty gallons. Weight, twelve hundred pounds.

From January to April, 1867, she was very feeble; stomach irritable, extremities œdematous, very much emaciated. April 13th, she began to improve; appetite returned. September 20th, she menstruated rather profusely, otherwise normal up to the present time.

Selections.

NOTES ON THE HISTORY OF RELAPSING FEVER.

By Meredith Clymer, M. D.

Having observed and reported the first cases of Relapsing Fever which happened in the United States, twenty-five years ago, I was naturally anxious to see and establish the identity or non-identity of the form of fever now prevalent in this city, and styled relapsing, with my cases of 1844. Through the kindness of Dr. Elisha Harris, Sanitary Superintendent of the Metropolitan Board of Health, and the medical officers of Bellevue Hospital, ample opportunities have been given me to do this. Although several of the symptoms prominent in the Philadelphia cases of 1844, notably the peculiar bronze hue of the skin, are absent, I am satisfied of the identity of the diseases. The New York cases will be reported by competent observers, and I will only here mention some of the points connected with the first appearance of relapsing fever in the United States, and give a sketch of its European history.

In June, 1844, a Liverpool packet with Irish emigrants arrived at Philadelphia. There had been some sickness on board during the voyage, and fifteen of the steerage passengers were immediately sent to the Philadelphia Hospital, and put in the wards in my charge. They were ill with a form of continued fever unlike any that I was then familiar with. I thought that I recognized (by the descriptions I had read of it) a variety of fever which had prevailed in Scotland and parts of England, during that and the previous year (1843–'44). The event proved the correctness of my conjecture. In all these cases the access was sudden, with severe headache, vomiting, occasional epistaxis, muscular and joint pains, rapid pulse, high body-heat, tongue coated with a thick creamy-gray or yellow fur, with red edges and tip (in some cases, for several days quite dry, as was the mucous membrane of the mouth), enlarged spleen, no special intestinal symptoms, and no eruption. In all there was great debility, and a peculiar bronzed hue of the face, more or less like that of persons suffering from chronic malarial toxæmia. About the seventh day the febrile symptoms suddenly subsided, with copious sweatings; the appetite became good, the expression of countenance natural, but much muscular weakness persisted, and the color of the face was of a dull straw chloro-anæmic tint. In every case about the fourteenth day a relapse happened, which in some had all the severity of the initial paroxysm, while in others it was slight. So far as I know, there was no second relapse; all were discharged from hospital during their second convalescence, at their own request, though many were still quite feeble. It was perhaps for this reason that I saw none of the sequelæ, reported so common after the disorder in Great Britain, as ophthalmia, with amaurotic symptoms, boils, swellings of the legs and ankles, pain in the feet without swelling, paralysis of the deltoid and other muscles. The disease did not extend to the nurses or other inmates of the hospital, though the fever-patients were not segregated. Two sisters, however, who had been residents of the city for several years, but whose brother had come out in the same ship and been taken ill at their house a few days after his arrival, were admitted into the wards with well-marked attacks of the fever. Several other passengers were at this time in the hospital, complaining of slight chills, and sweatings, headache, nausea, and vomiting, with loss of strength, but got well without any other decided symptoms of the disease.

The treatment consisted of mild salines, a nourishing diet, with quinine and wine.

Several cases of illness from the same ship were sent to the Pennsylania Hospital, and were under the care of the late Prof. W. Pepper, who at first was disposed to regard them as mild typhus, but he subsequently admitted their resemblance to the British epidemic.

Prof. Austin Flint ("Principles and Practice of Medicine") says that Dr. A. Dubois, of New York, reported in the "Transactions of the American Medical Association," vol. ii.. a few cases in 1848. In the *first* volume of the Transactions of the Association, and in *The Annalist*, June, 1848, Dr. Dubois has an article entitled "Ophthalmia post Febrilis; a Severe Form of Inflammation of the Eye, following Typhus Fever as it appeared in the City of New York in 1847–'48." From the ocular sequelæ he infers that it might have been the same type of fever which prevailed in Dublin, 1826, and in Edinburgh, 1843; he does not say that he saw any cases of the fever, nor does he give the clinical history of any; he publishes a short note from the late Dr. Swett, at the time one of the physicians of the New York Hospital, with a summary of the symptoms of the cases of fever which had been admitted into the hospital during the years 1867–'68, and certainly no one can recognize the phenomena or course of true relapsing fever in Dr. Swett's description. "The duration of the disease was from two to three weeks," and not from five to seven days; "the condition of the brain and nervous system did not differ from the fever of former years;" diarrhœa was of frequent occurrence; there were inflammatory complications, which varied with the season, as dysentery in the autumn, peritonitis in the winter, pleurisy in the spring, etc. Bronchitis was common, with occasional "inflammation of the fauces, tending to œdema of the glottis." In "many of the cases" there was "an abundant rose-colored rash on the trunks and limbs," which came "in patches irregular in shape and size, disappearing on pressure." There was no constant lesion; sometimes the glands of Peyer were affected, and sometimes there was ulceration of the large intestines. Relapses were by no means infrequent. I have been permitted to examine the medical case-books of the hospital for these years, and I can say that, from the reports there entered of of the fever cases, there was no analogy nor identity between them and true relapsing fever.

Relapsing fever seems to have occurred from time to time in the British Isles, since the middle of the last century, and since 1846 to have occasionally been met with on the continent of Europe. It has been variously described under the names of *five*

or seven day fever, seventeen-day fever, bilious-relapsing fever, short-relapsing fever, short fever, break-bone fever, famine fever, hunger fever, or hunger pest, synocha, typhus recurrens, etc.

By Rutty's "Chronological History of the Weather, Season, and Diseases in Dublin, from 1725 to 1765," London, 1771, a similar epidemic appears to have prevailed during July, August, September, and October, 1739, and again in 1741. Of the first he says: "It terminated sometimes in four, for the most part in five or six days, and commonly in a critical sweat: it was far from being mortal." Of that of 1741, he writes: "Through the three summer months there was frequent here and there a fever, altogether without the malignity attending the former, of six or seven days' duration, terminating in a critical sweat; but in this the patients were more subject to a relapse, even to a third or fourth time, and yet recovered." It undoubtedly preceded and accompanied the great typhus epidemics of 1816, '17, '18, '19 (Barker and Cheyne), and 1826 (Reid and O'Brien), in Ireland. Dr. O'Brien says that, at the beginning, there were two fevers, the "ordinary typhus or fever of the old constitution, which was very fatal," and "a fever of the new constitution, lasting only a few days, and seldom fatal, but frequently relapsing." At first the relapsing cases were predominant, but, as the epidemic advanced, the proportion of relapsing cases greatly decreased. From 1828 to 1842 it may be said to have disappeared from Britain (Murchison). It was a common form of fever in Edinburgh from 1826 to 1829; and in 1843–'44 it again appeared in Scotland and parts of England (Rose Cormack, Henderson, etc.) In 1847 it became epidemic in Edinburgh, Glasgow, and other large manufacturing towns of Scotland (Waters, Orr, R. Paterson). In the same year it was prevalent also in London, and was described by Ormerod, Bottomley, and Sir William Jenner; the latter, in his memoir, remarks on the constancy of its character since it was first known (*Medical Times*, 1849–'51). It no doubt formed the great bulk of the cases in the fever epidemic which raged in parts of Germany, particularly Upper Silesia, in 1847, as described by Virchow, Von Bärensprung, Dümler, and Suchanek. It is true that it was not generally recognized as such at the time by the German writers, who made no distinction between it and typhus and typhoid fevers; but Dr. Parkes shows ("Diagnosis of Fevers") that, from the case-histories, these epidemics were mainly made up of relapsing fever. In 1855 it broke out among the British troops in the Crimea (Lyons).

Dr. Baldon has published an account of an epidemic of relapsing fever, which appeared in Peru in 1854, and proceeded along the chain of the Andes, but never at a lower elevation than 1,500 metres. In 1859 it reached Bolivia, and the neighboring parts of Chili. In 1,000 cases the deaths were 250, about equal in both sexes—children, under sixteen years, 92; adults, 110; over sixty years, 48.

Toward the end of 1864, and during the first part of 1865, relapsing fever made its appearance at St. Petersburg, and, not being at first recognized, it seems to have caused much alarm. In a report made to the Medical Officer of the Privy Council by Dr. George Whitley, who had been sent to the Russian capital with instructions to inquire into the kind of fever which had been recently epidemic there, it is stated that, in its rise, progress, causes, symptoms, and fatality, it resembled the British relapsing fever, and was of a form until then unknown to the physicians of St. Petersburg. The number of cases of fever admitted into the civil and military hospitals from the outbreak, August, 1864, to March 1, 1865, were 7,097 typhus, and 7,625 relapsing fever; the deaths from typhus were 1,198, and from relapsing fever 836; under the head of typhus, both typhus and typhoid fever are included. Dubowitski, in "A Report to the English Ambassador by the Russian Government," says that, though it had never before visited St. Petersburg, it had been at Moscow in 1840, and at New Archangel, in Russian America, in 1858. In 1863, '64, '65, it prevailed at Odessa (Bernstein).

During 1867 it appeared in East Prussia, having probably extended westward from Russia; and we find in the German medical periodicals of 1868 very full and accurate accounts of it, under the name of *typhus recurrens*. Riess gave a history of it when at Berlin (*Berlin. Klin. Wochenschrift*, No. 22, 1868); Swidersky described its visitation of Posen (*Deutsche Klinik*, No. 51, 1868); and Lebert and Pastau published clinical histories, and the results of their observation of the disease at Breslau (*Berlin. Klin. Wochenschrift*, No. 26, 1868; *Bul. de l' Académie de Méd.*, xxxiii., 821; and *Berlin. Klin. Wochenschr.*, No. 40, 1868). During the same year some cases are reported in Belgium (Van Biervliet fils; *la Presse Méd. Belge*, 7 and 8, 1868).

Since the epidemic of 1847–'48, relapsing fever, Dr. Murchison says, has been gradually disappearing from Great Britain, and that for twelve years previous to 1868 not one case had been seen in the hospitals of London, Edinburgh, and Glasgow. Prof. W. T. Gairdner had not seen or heard (1868) of a single case at Edinburgh since 1855; and, according to Dr. Lyons, true relapsing fever has been a rare disease in Ireland of late years.

In the summer and early autumn of 1869 relapsing fever threatened to become again epidemic in London. On July 4, 1868, an Irish girl, aged twenty, eight years resident of London, was admitted into the Fever Hospital from Whitechapel, with the disease. This was the first case in that institution for fourteen years. Four days later, a Polish Jewess, not speaking English, and whose length of residence in London could not be ascertained, was received, also from Whitechapel; and on July 30th, a third case, a girl, aged fourteen, who had lived in London all her life, was admitted. Several other patients with the fever, including a Polish family, came into the hospital between the 1st and 6th of July. In September and December, 1868, seven Polish Jews were admitted into the German Hospital (Weber, *Medical Times and Gazette*, December 19, 1869, and *The Lancet*, February, 1869). As has been stated above, relapsing fever was prevailing in Prussia at this time, and there is no evidence to show that there were any cases in Ireland and Scotland, as in former epidemics; and though neither at the Fever nor German Hospital could the first cases be traced directly to importation, still, as Dr. Murchison remarks, circumstances seem to point to the probability of the disease having been brought in the summer of 1868 from Germany.

In May, 1869, the disease again appeared at the Fever Hospital, and, during the months of September, October, and November, the number of cases rapidly increased, and it was apparent that it had become epidemic. The admissions were: May, 1869, 4 cases; June, 3 cases; July, 7 cases; August, 15 cases; September, 34 cases; October, 127 cases; November (first fortnight), 104 cases. Of the 70 cases received up to October 1st, inclusive, 2 were contracted in the hospital, and the remaining 68 were brought from 19 of the 36 parochial districts of London; but Whitechapel, which furnished the first cases to the German and Fever Hospitals, and Bethnal Green, together supplied more than one-half the cases. None of the patients, however, came from the same houses or even streets as the patients admitted into the two hospitals in the summer and autumn of 1868. None of the sixty-eight, we are told, were natives of Germany, and nearly all had resided in London for many years; with few exceptions, they were in a deplorable state of destitution.

The disease presents all the characteristic features observed in former epidemics. Dr. Murchison (*Lancet*, vol. ii., 1869, p. 504) thus summarizes the symptoms: "The pyrexia sets in suddenly, the temperature often rising within the first twelve hours to 104° or 105° Fahr., and the pulse to 120 or higher, accompanied by severe headache, and muscular and arthritic pains, sleeplessness, but no impairment of intellect, painful enlargement of the liver and spleen, in many instances frequent and distressing vomiting, and in some slight jaundice. These symptoms subside suddenly with profuse perspiration, about the fifth, or, oftener, on the seventh day. In a few hours the pulse may fall from 128 to 84 or 60, and the temperature from 104° or 105° Fahr. to 96° Fahr." In a case I saw in this city, January 30th, at 10:30 A. M., the pulse, which on the preceding evening had been 115, was 66, and the body-heat had fallen from 107° to 98°.5 Fahr. Dr. Murchison reports a case (*The Lancet*, *l. c.*), in which, on the evening of December 12, 1869, the pulse was 108, and the temperature 104° Fahr.; on the next morning the pulse was 75, and the temperature 96°.6 Fahr. A little sickness and hepatic tenderness may remain for a day or two, but, as a rule, the patient at once regains his appetite, and may be up and wishing to leave the hospital, when on the fourteenth day from his first attack there is an abrupt relapse of all his former symptoms, lasting for three or four days, and then subsiding.

Rashes, though not constant, have been noticed; in some a subcuticular mottling, not unlike that in typhus, in others rose-colored spots of typhoid, while many had small hæmorrhagic dots about the size of a pin's head. There were no true petechiæ. Crops of herpetic vesicles on the face appeared in several. In a clinical lecture (*The Lancet*, January 22, 1870), Dr. Murchison says: "There is no specific eruption, the innumerable small petechiæ like flea-bites, except that they are a little larger, are really the results of insect-bites, or small purpura spots, from an altered condition of the blood, and are in no wise specific." Zuelzer, in his account of the St. Petersburg epidemic in the Appendix to his translation of Murchison on Continued Fevers, states that in some cases the chest, abdomen, and back, were covered with numerous small red spots, disappearing on pressure, and lasting for three or four days. Wyss and Bock, in their account of the fever at Breslau, speak of the eruption as similar to that of exanthematic typhus. In the case given by Dr. Murchison in this lecture, the front of the chest and abdomen were covered by a number of minute lake-colored spots, not at all elevated, and disappearing on pressure. He remarks that he has met with the same eruption five times only in several hundred cases of the present London epidemic which he had seen, but that it is very exceptional. In one of the New York cases which I saw, there was a regular maculated eruption in its several stages.

Quinine in twenty-grain doses had no effect in preventing relapses or modifying the course of the disease in the London cases. The same want of all controlling power of the drug was seen, Dr. Whitley says, in the St. Petersburg cases.

It has been remarked by systematic writers that relapsing fever has never been met with in India or in warm climates; but it seems that without doubt famine fever prevailed to such an extent in the Punjaub in the autumn of 1868, among the muleteers who had returned from the Abyssinian expedition, that it became necessary to enforce a strict quarantine (*The Lancet*, vol. ii., 1869). An account of an epidemic of relapsing fever at the factory on the river Dumas, *Ile de la Réunion*, in 1865, has been published by Dr. MacAuliffe, in the *Archives de Médecine Navale*, 1868.

On the 23d of October, 1869, Mr. John Simon, the distinguished chief of the Medical Department of the Privy Council Office, issued a circular, in which, after alluding to the probable importation of the disease into London, and sketching the natural history of the fever, he gives a series of practical hints to those who have to deal with the disorder in the way of prevention. He writes: "The greatest personal predisposition is given by states of poverty and privation. It is in a very high degree communicable from sick to healthy. It is eminently a disease that cannot safely be treated in the houses of the poor."

This circular has probably led to the building of a temporary hospital at Hampstead, London, at a cost of £5,542, which has just been opened. In *The Lancet*, January 22, 1870, Dr. Murchison says: "The disease has spread so rapidly that the resources of this vast metropolis are now being taxed to their utmost to find accommodation for persons attacked with it."

The disease is more painful than typhus, but its mortality is, as a rule, small; but, as its victims are left for a long time in a very feeble state, they are in a peculiarly favorable condition to contract typhus fever, an epidemic of which seems invariably to accompany famine fever.

The conditions favorable to an outbreak of relapsing fever are essentially those of destitution and starvation. It is emphatically a famine fever. The pauper population are almost its only victims. In the Edinburgh epidemic of 1843–'44, we are told that the disease was confined to the poor, and that the medical men whose practice was among the better class did not see a case. In Glasgow, for two years before its appearance, the poor had been in a state of extreme privation. In Leith, "great misery and destitution prevailed among the poor." Of 1,768 cases collected by Allison, Halliday, Douglas, and Murray, 1,179 (about two-thirds) were out of employment and utterly destitute at the time of seizure. Dr. Lynch, of Loughrea, reported (1848), "most of the cases of fever supervening upon the starvation-state were characterized by repeated relapses and short febrile attacks. I saw no instances of the short relapse-fever among the gentry, except in clergymen and physicians." Similar observations were made in London. Dr. Whitley says that there was much suffering among the poor at the time of its outbreak at St. Petersburg, and that their chief food, head-cabbage and fish, was scarce and inferior in quality, and vegetables generally had been destroyed by an early frost. The editor of the *Medical Times and Gazette* writes concerning the present London epidemic (November 6, 1869): "The price of provisions has been inordinately high. Wheat prior to the last harvest averaged 72s., and meat is an article which many of the poor have been unable to obtain at all. Butchers, carrying on their trade in the less wealthy quarters of London, assure us that the poor, who formerly bought little, now do not buy at all." Dr. Murchison says of the patients admitted into the Fever Hospital with the disorder: "With few exceptions, all have been in a deplorable state of destitution." Mr. Simon observes: "Where destitution has not existed, relapsing fever is not likely to be epidemic." The Germans have recognized the connection between ill-feeding and this fever, by the name they have given it—*hunger-pest.* Overcrowding, so potent an ætic factor in typhus, seems to have but little part in the causation of relapsing fever. Weather has no influence over its origin or propagation. "It prevails alike in seasons remarkable for the amount of rain (Silesia, 1847), and in seasons remarkable for their drought (Edinburgh, 1843); in unusually hot summers (Edinburgh, 1843), and in the cold of winter (Glasgow, 1842–'43, and Leith, 1843–'44)" (Murchison, p. 314). There is every reason to believe that the poisons of typhus and relapsing fever are distinct, that the one fever never communicates the other, and that an attack of the one gives no immunity from an attack of the other (Henderson), though they often prevail conjointly.

Relapsing fever is intensely infectious, and its cases require peremptory isolation.

Since the above was written, and in print, Dr. Harris, the Sanitary Superintendent of the Metropolitan Board of Health, has kindly given me the following facts concerning the progress of the present epidemic of the fever in this city:

Thirty-eight groups, or fever-nests, including one hundred and ninety-three cases; of these, one hundred and sixty-four cases have been thoroughly studied, and found to have been limited in origin to thirty-five tenements, which usually consisted of a single living-room, with a communicating bed-room off. In only one instance it was found in two floors of the same house. Four of the groups were on the top-floor, three on a middle-floor, and all the others on first-floor, basement, or cellar—cellars greatly preponderating. With one exception all the groups have been traced to five, and possibly to three primary points of departure. One of the first groups will illustrate the history of the whole:

No. 59 Cherry Street, cellar lodging-house. In the last week of December, sickness was reported there. Sanitary Inspector O. G. Smith, of that District, examined the patients, and expressed the opinion that it was typhus or typhoid, and recommended that all the sick be immediately removed to hospital. He ascertained that various lodgers from that cellar had entered hospital at different times during the preceding six weeks. The cellar was summarily evacuated, under official orders, January 3d, all the sick being sent to hospital, and the family and lodgers catalogued, and put under observation in their new home above-ground. Now this is the record: 1. No less than nine persons had suffered from relapsing fever in that cellar previous to January 1st. 2. These patients had bowel symptoms, and one at least had eruption which was pronounced petechial. At this cellar, No. 59, two children named Higgins, from 73, in the same block, and on the first floor, in comparatively well-ventilated quarters, passed in and out, and became sick early in January. Three cases occurred in one room at the latter tenement, and several others are believed to be traceable to the same place. 3. Just before the Board of Health caused No. 59 to be evacuated, a mother and daughter, named Casey, transferred their lodgings to 79 James Street, where each of them in succession became sick and went to hospital; and, a little more than a week after the daughter went, the keeper of the lodging-house, Mrs. Dunn, became sick. This cellar was summarily evacuated, and the inmates placed in new quarters above ground, and put under observation for further developments. 4. At the cellar in 59 Cherry Street, two seamen, named Powers and Harris, were frequent visitors during the month of December. Powers became very sick, and was sent from the forecastle directly to the Seamen's Hospital; while the deck-hand, Harris, became so sick on the 26th of December that it was necessary to take him from his forecastle lodging at the foot of Catharine Street, and convey him to the Sailor's Boarding-House, at 332 Water Street, where he was laid in a close, dark lodging-room, with three other lodgers, all of whom became sick with the same fever in less than two weeks, this man being sent to hospital after two or three days. 5. Another seamen, by the name of Thomas Kane, from the same forecastle, and who was also a fellow-lodger with the seaman Harris, on the 27th of December, at the lodging-house above mentioned, had been sick with the fever from Christmas. On the 7th of January this man came, feeling unable to return to his duties on shipboard, visited his sister, Mrs. O'Brien, living on the top floor of front-house, 337 First Avenue, became very sick, with high fever, that night. His sister's family consisted of her husband and herself, an infant at the breast, and four little children at various ages. The children lay down beside their sick uncle, and slept all night under the same blanket upon the floor. These children and the entire family have sickened successively in the following order, viz: (1.) The four children that slept at the side of their sick uncle on the night of the 7th of January, the period of incubation in this case being precisely nine days. (2.) Mrs. O'Brien and her infant; and (3.) In this whole group of five children and two adults, Mrs. O'Brien became sick on the night of Sunday, the 5th of February. —*New York Medical Journal.*

Foot and Mouth Disease.—In January last no less than 20,000 cattle had been reported as infected with the above disease in Great Britain, in consequence of which Her Majesty's Privy Council in Ireland, by a recent order, have prohibited the importation of cattle into Ireland except those coming from Spain and Portugal.

CANCEROUS STRICTURE OF THE RECTUM, PRODUCING OBSTRUCTION, SUCCESSFULLY RELIEVED BY COLOTOMY.

By T. B. Curling, F. R. S.

Mr. C. aged forty-eight, a tall, hale-looking man, a market-gardener, was brought to me by Mr. C. Thompson, of Westerham, on March 13th, 1868, on account of obstruction in the lower bowel. It appeared that he had been subject to relaxed bowels for three or four years, and that he had not passed a formed motion during that period. He had voided bloody mucus occasionally. His bowels having been confined for several days, he was induced to take some black draughts and large doses of castor oil. They produced no evacuations, but caused vomiting, and he then sent for Mr. Thompson, who allayed the sickness with opium. He passed afterwards a very small quantity of liquid feculent matter. When I saw him, obstruction has existed for twelve days. His tongue was loaded, and he had lost all appetite. His pulse was tolerably firm. His abdomen was enlarged, but not extremely distended, and there was no pain on pressure in any part. On digital examination of the rectum, I detected, as high up as the finger could reach, a mass of induration, with a close irregular aperture, indicating a cancerous stricture. I had no hesitation in recommending colotomy to relieve the obstruction, and to retard the progress of the cancerous disease. On the 15th, I went down to Westerham, and performed the operation. Since the 13th, about half a pint of liquid feculent matter had escaped from the rectum, but the distension of the abdomen was increased. Chloroform was given, and the colon was found without difficulty. Not an ounce of blood was lost in the operation. Liquid feculent matter passed freely from the opening in the colon in the course of the day.

I did not see this patient again, but received reports of his subsequent progress from Mr. Thompson. In a letter dated March 19th, 1869, more than a year afterwards, he states: "The colotomy has answered its purpose admirably in Mr. C's. case. There has been no trouble in getting free evacuation of the bowel, and matters have been so well managed that really there has been little or no unpleasantness. He has worn generally a pad—a piece of sponge covered with oil silk,—or a large bone nipple shield immediately over the false anus, covered with a small square of spongiopiline, slightly wetted with carbolic-acid lotion, the whole being kept in place by a stout belt. The bowels have generally emptied themselves once a day, and the rest of the time there has been no inconvenience. He has suffered a good deal from tenesmus, and discharged of blood-stained mucus from the rectum; but I control this, and the pains which at times are severe all over the pelvic region, with suppositories of opium. He is now using about four grains a day. He is getting slowly weaker, but his life is very tolerable."

Our patient lived till the 12th of August, having survived the operation seventeen months. Mr. Thompson writes thus:

"He had been gradually sinking for some months, and the end was caused by the sudden loss of a considerable quantity of blood from the rectum. He suffered very much latterly from attacks of violent neuralgic pains, with spasms of the muscles of both thighs, and occasionally had attacks of convulsive spasms of the muscles of the arms and neck. To relieve these, I was accustomed to give morphia subcutaneously, and at last the large dose of three grains and a half was thus administered twice daily without producing narcotism. Besides this, the rectum was so irritable that he had four grains of opium introduced in suppositories twice daily, and he was most uncomfortable if they were omitted."

Mr. Thompsom examined the body, and noticed how little it was emaciated. He found the shrunken colon healthy for about four inches below the false anus. He could not get the tip of his finger below the sigmoid flexure. A mass of hard cancer blocked it completely, and seemed to have obliterated the several structures. It invaded the posterior wall of the pelvis, sacral plexus, etc., accounting for the pains the patient had suffered. The other viscera appeared healthy, but the examination was hurried. A large tumor had formed at the right elbow, which seemed to be a deposit of soft cancer in the upper part of the radius, distending the bone.

This case is deserving of record, as showing the great advantage of colotomy in cancer of the rectum. The patient was not only rescued from impending death from obstruction, and survived the operation seventeen months, but, as Mr. Thompson's reports show, he lived in tolerable comfort for twelve months, when the advance of the disease gave rise to considerable suffering, which required unusually large doses of morphia for its relief. It was fortunate for the patient that colotomy was required at a comparatively early period of the disease; for it is only when the operation is performed early that we can hope to retard the progress of cancer, and to prevent the frequent painful defecation which is generally so distressing in these cases.

In a recent discussion at the Clinical Society, Mr. Erichsen is reported to have said "that the great relief afforded by colotomy in cancer had been demonstrated in Paris as elsewhere." The credit of having first suggested the operation to retard the progress of scirrhous disease of the rectum and large intestine, and to prolong life, is justly due to Amussat; but his memoirs on the operation, which I presume include all the cases in which he had performed it, contain no case in which it was done without the existence of obstruction—merely to relieve the sufferings of cancer; and what is remarkable, the French surgeons do not seem to have appreciated the advantages of the operation for this purpose. I know of no published case in which colotomy has been performed in Paris except to relieve obstruction.—*Lancet.*

ANOINTING IN INFANTILE DISORDERS.

By H. Guard Knaggs, M. D., F. L. S.

DURING the past eleven months I have been testing, with uniformly successful results, the value of a very simple method of treating such infantile complaints as atrophy, bronchitis, convulsions, diarrhœa, febrile disturbances generally, and indeed all disorders of childhood which are accompanied by an unnatural state of the skin.

The treatment simply consists in smearing with salad oil the whole surface of the body, from the crown of the head to the tips of the fingers and toes, the process being repeated every twelve, six, or even four hours, according to the urgency of the case. Of course the use of a long flannel gown or small blanket is obvious, and the fluid should be slightly warmed.

The application of oil possesses the following immense advantages over the ordinary warm bath :—

1. Skin-action is more completely and permanently restored.
2. The danger of reaction is avoided; for there is no sudden change of temperature ; and, moreover, the sheet of oil protects the surface from atmospheric influences.
3. It acts as a fuel-food, not only preventing waste of tissue, but actually increasing the bulk of the little patient.
4. It does not depress, but, on the contrary, appears to exhilarate.

It will scarcely be credited by many that the formidable affections above mentioned will frequently yield to this treatment, or at any rate show signs of abatement in from twenty minutes to four-and-twenty hours ; but such is the case ; though sometimes forty-eight or even seventy-two hours will elapse before any decided signs of improvement occur. By way of illustration, here are a few examples out of many, and I shall be happy to satisfy any gentleman as to their genuineness :

ATROPHY.—My cousin, Mr. S. H. Knaggs, was called to see an infant, whom he found apparently *in articulo mortis.* The mother informed him that she had sent for him "for satisfaction only." The child was oiled, and in twenty minutes began to look about it and took its food. In the course of a fortnight it recovered its ordinary health and strength.

Several similar cases have come under my notice. One of them is rather amusing. A brother practitioner himself told me of, and gave me permission to publish, the following conversation which took place between him and a parish patient:—"Whose child is that? "Why, mine, sir." "But surely not the child that I told you a week or two ago you would never rear?" "It is though, sir." "Then the medicine seems to have set it to rights." "But it has had none of the medicine." "Then what have you been doing with the child?" "Why, sir, don't you recollect you told me that a friend of yours recommended that sick children should be rubbed all over with salad oil, and that I might try it if I liked, but that you had no faith in it? Well, sir, I did oil it, and the child has been improving ever since."

BRONCHITIS.—Last January a desperate case came under my care, which in spite of active treatment became rapidly worse. As a last resource I smeared it all over with salad oil, and, to my utter astonishment, there was a marked improvement in the breathing in less than twenty minutes. In a few hours the bronchitis entirely subsided.

Another case—double capillary bronchitis, neglected for several days—came under my relative's notice. He considered it too far gone for medicinal measures, and therefore ordered it to be oiled every four hours. The next day the symptoms had diminished in severity, and on the morning of the third day the child was sitting up in bed taking food, and to all appearance convalescent.

CONVULSIONS.—In these cases the effect of oiling is sometimes truly surprising, the fit ceasing before the completion of the operation, and not subsequently returning. A patient informs me that whenever she observes the symptoms which used to precede convulsions in her boy, she at once oils him, when a calm sleep follows, from which the child wakes up refreshed.

DIARRHŒA.—Some time since my cousin had an uncontrollable case of diarrhœa under his care in a child of seventeen months. I advised him to give oil a trial; but he said it was too far gone for anything to be done. I saw the little sufferer myself a day or two afterwards, and ordered it to be oiled every six hours. There was a marked improvement immediately after the first application. By the next day the prostration was gone. Previous to this attack the child was a "puny little thing;" but now (oiling three times a week having been persisted in up to the present time) it is "a splendid boy."

ENLARGED LIVER IN A RICKETY CHILD, WITH BRONCHITIS SUPERVENING.—This case had been under the care of a well-known hospital physician, who gave it up, saying that nothing more could be done for it. I ordered it to be oiled every six hours. After each application a calm sleep followed. In about seventy-two hours the bronchitis began to give way; and a few days afterwards the liver was observed to have diminished in size. The child has not since ailed.

Such is a sample of a few of the cases which have come under my notice. Did I not confine these notes to infantile disorders, a long string of other complaints, which are to be benefited or cured by oiling, might be added. It seems as though the good old Greek and Roman practice will have to come up again. Such is progress!—*Lancet.*

INVERTED SEXUAL-FEELING ("CONTRARE SEXUAL-EMPFINDUNG") A SYMPTOM OF A NEUROPATHIC (PSYCHOPATHIC) STATE.

By Professor C. Westphal.

THIS title is used by the author to designate *a congenital inversion of the sexual instinct, with a consciousness of the morbid nature of the symptom,* which has hitherto been but imperfectly described, if at all. The cases relate to individuals of both sexes.

CASE I.—Miss N., aged thirty-five, was received into the insane wards of the Charité, in Berlin, May 30, 1864. She had lived for some years with her elder sister, who kept a boarding-school for girls, and who gave the following statement: "My sister was not quick to learn when a child, though her memory for other things than lessons was always good. She has always had a tendency to melancholy, and to discontent with herself and her fate. But this, and her self-will, irritability, and violence, were ascribed to the misfortune of having a cleft palate. She had no tendency to lie, or steal, or commit acts of malice; she was steady and industrious, but always very reticent, on account of her deformity, as it was supposed. But last winter (1863–'64) she changed very much. The attacks of depression became much more frequent, and were followed by a state of complete indifference; then she would fall into a violent passion without any cause, and would use expressions such as never before fell from her lips. While in this excited state, her eye had a strange and gloomy expression, and there was a peculiar twitching of the face, which she did not have at other times; she would then say that she wished to go out of the house, to go to America, and other things of the sort. These attacks returned in this fashion regularly, and have been much worse during the past week. She often had, at the same time, a very strong desire for sleep during the day; she often suffered of late from a severe piercing headache in one spot; and, at the time of the menses, had a feeling of constriction in the chest.

"Six days ago I found her weeping violently. To my urgent inquiries she replied that she was dreadfully unfortunate, for she was excessively enamoured of a young girl, and could no longer stay in the house, but must go away. She wept three days and nights without ceasing; and ate nothing during that time. Then alternations of passion and impassivity followed, and finally she has been brought here, in accordance with her own earnest desire, to be restored to health."

The patient appeared perfectly calm and natural; and gave in a clear and connected manner the following account of herself, which there is abundant reason for believing to be correct.

She was very fond of boys' plays when a child, and liked to wear boys' clothes. From her eighth year she had felt an inclination toward young girls, not indiscriminately, but toward certain ones, who captivated her from the moment she met them. "It is remarkable—it lies in the eye—it is a kind of magnetism that attracts me," she said. These girls she "courted" systematically, and several times was so far successful as to be allowed to handle their genitals. Other girls were distasteful to her, even to kiss. She had felt no sexual excitement until the menses came on. From her eighteenth to her twenty-third year she had most frequent opportunities for gratification. "The happiest period of her life" was during five weeks when she had nightly opportunity of imitating the sexual act with a female cousin—never, however, allowing *herself* to be touched. After her twenty-third year she had no more such opportunities, but practiced onanism, "to which she felt irresistibly forced," especially about the menstrual period. The act itself was become disagreeable to her; she had tried her best to abstain from it. Whenever she forcibly suppressed the desire to masturbate, she perceived an ill odor and taste. Toward men she felt not the slightest sexual inclination. She had voluptuous dreams, in which she always imagined herself taking the part of a man. She declared, without being questioned, that her passion for her own sex was horrible to her; that she could not conceive how she came to differ thus from other girls; that she had often longed most earnestly to be set free.

She described her passion for a young lady pupil, boarding in her sister's house, to which allusion has already been made. It possessed her from the first moment she set eyes upon her, nine months before. Indecent familiarities were offered, and were repulsed with contempt. She then experienced the pains of an ardent sensual passion; felt grieved and insulted at the girl's refusals; was tormented with jealousy; and often stood as if spell-bound, gazing at her. Finally, she found opportunity, while bringing her a cup of tea and other articles, to beg for pardon, and for "one single kiss," and, when refused, broke out into the fit of passionate excitement which shortly preceded her admission to the hospital.

Nothing especially remarkable in her personal appearance. Vaginal examination by the finger was excessively painful. No disease of any other organ, except violent headaches limited to a region near the lesser fontanel, which came on four years ago, after a blow upon the spot. Her father was melancholic for a long time, and committed suicide. Her mother died of a disease of the breast; and, when pregnant with the patient, was once severely frightened while in the act of kissing some one; so at least, says the patient.

During the two months of her stay in the hospital she was perfectly quiet and orderly. She often asked for her discharge, saying that her mind was not diseased. A certain weakness in judgment, an inconsistency of feeling, and a want of perception of the gravity of the affair which had preceded her admission to the hospital, were quite apparent.

In May, 1869, she was again seen by the author. The passion had not wholly died out, and she still abused herself, and suffered at times from headache in the old place. Her bearing during a vaginal examination was free from the slightest trace of immodesty, and in general she presented the appearance of a perfectly modest woman. She said, "I feel like a man, and should like to be a man; women's work has always been distasteful to me. I should like a man's trade; for example, I have always felt interested in the making of machinery." A short time before and after the menstrual flow, she is lively and cheerful; she feels the desire to mastrubate only at these periods; then for a week or less she is gloomy and dull, and has occasional *fits of involuntary gazing* at persons or objects, without being able to describe them properly afterward—the impulse to stare being quite irresistible. Afterward she feels pretty well, until the next menstrual period.

CASE II.—August H. was arrested under suspicious circumstances, having on women's clothes, and was brought to the hospital in September, 1869. Tall, strongly-built, well-nourished, and muscular. Larynx, beard, genitals, and anus normal. Voice peculiar, soft, and drawling. Manner almost womanish; somewhat affected, or theatrical. Blushes and trembles when subjected to physical inspection as above. Has had repeated epileptic attacks, suspected to have been feigned. The following is the substance of his own story:

He had a strong propensity for wearing women's clothes, but could not say why he did so, and at times felt it as a great misfortune. From his eighth year he had often been punished by his mother for this fault, but it increased as he grew older. He had always been with females from his youth up; he took delight in their society, especially when he could dance in women's clothes, which gave him far greater pleasure than dancing in men's clothes. He owned a great many articles of jewelry appropriate to women, and had his hair arranged in the fashionable manner. He had had the desire for sexual intercourse with women, though but rarely, as he feared to become ugly if he practiced it. Had often been solicited to commit sodomy with men, but had never consented. Had not masturbated since early boyhood. His confessor had told him that when excited he had a glittering eye and a peculiar gait, which attracted people to him.

In his sixteenth year he had an epileptic attack, and since then he had been subject to their occurrence at very irregular intervals. His memory was quite weak in some respects. He was easily angered or made to weep, and could not drink liquor at all without being excited. He had often had attacks of melancholy, in which he would break out into passionate curses. His associates seem to have been low and vicious. He often swindled men out of their money by representing himself as a girl, and afterward making his escape; was repeatedly imprisoned for this offense, and for theft. "He was glad when he was sentenced to five years' imprisonment, because he hoped that this might have the effect of delivering him from his torture; for such his propensity really was to him."

Three authors are cited, who have described phenomena essentially similar to those of the first case. Casper has published a written confession, sent by an unknown man, and a statement of the case of Count Cajus, who was convicted of pederasty. Tardieu discovered and published a similar "confession." Finally, a certain "Numa Numantius" has written a pamphlet on "die mannmännliche Liebe," which contains the following remarkable statements, made apparently by one belonging to the class described:

"Our whole character is not masculine, but feminine; it is only in outer appearance that we are men; the habits and manners of men have been engrafted upon us to a certain extent by association and education, but we only play the part of men as if on the stage. The Urning" (as the writer designates a person of this class) "is very fond, when a child, of girls' sports and occupations, and particularly of dolls. At the appearance of puberty, the sexual inclination is at once aroused for the *male* sex, and that without intervention from any other party. We have never felt the slightest inclination toward even the most beautiful woman, but have always taken the greatest delight in personal contact with handsome young men, in pressing the hand, kissing, or in a certain form of sexual commerce. It is absolutely impossible for us to root out this instinct; a circumstance which is greatly to be regretted from the impossibility of our love ever being properly returned, and from its unfruitfulness. If it lay in my power to-day to make the choice, I would prefer the love toward woman, unconditionally. But our love is fully as elevated in ideal as yours; it is like that felt by women; it is fervent, noble, tender, profound, self-denying, and patient." The writer even speaks of "love-poesy" originating in this feeling.

In the confession quoted by Casper, the peculiar glance of the eye is said to convey instant recognition between two people of this class, "like an electric shock;" they are "spell-bound" to each other.

"Numa Numantius" quotes from H. Fränkel the history of a young man named Süsskind Blank, who had entirely feminine tastes, and earned a competence by skillful embroidery. Conformably to his presumable weakness of intellect, this man actually petitioned the authorities for leave to bear a feminine name and to wear women's clothes, and advertised his own "betrothal," under the name of Friederike Blank, to a stranger, a mechanic. He was several times punished for the crime of (passive) pederasty, and, when last arrested, jumped into the water and drowned himself.

Westphal finds evidence of mental disease in all the cases quoted. Miss N. was the victim of a species of folie circulaire. Aug. H. was a great rascal; but it is improbable that he assumed insanity for a purpose, as he never alluded to himself as insane, nor tried to make capital out of the fact. Many people with whom he had lived as a servant thought him weak-minded; and his feminine gestures and tones of voice were often remarked upon, especially when he became interested in some feminine occupation. He was also subject to hystero-epileptic fits. "If these fits were simulated, it is at least singular that he should have chosen for imitation just that disease which is in exceedingly close relation with his form of feeble-mindedness; for I can hardly remember seeing a single case of moral insanity in which epileptic attacks were not demonstrably present."—*Archiv f. Psychiatrie u. Nervenkrankheiten*, ii., 1.

STUPOR MELANCHOLICUS IN THE FORM OF LETHARGY —SLEEP LASTING SEVEN MONTHS WITHOUT INTERRUPTION—APPARENT DEATH.

By Legrand du Saulle.

THE patient, Della F., was an Italian, aged thirty-two. He had been an assistant in a shop in the city of Paris for eight years. His health was excellent. He was a model of punctuality, neatness, and sobriety; had never had intercourse with women; was shy, uncommunicative, and avaricious. In June, 1868, he suddenly began to show symptoms of religious monomania, and by the middle of July the disease was very fully developed. He began to neglect his business. On the morning of July 31st he left the shop, carrying with him the sum of 1,500 francs, which he had been carefully laying up since his arrival in Paris. He walked straight on, gesticulating, and apparently much alarmed, until he reached the Place de l'Etoile, where he threw his money into a dirt-cart, and went on his way sighing. About a mile from that place he seemed to be overcome with despair, and kneeled down sobbing in the middle of the street, where he was run over by a wagon, and the lower third of his tibia broken. He was treated in the hospitals Beaujon and Ste. Anne until August 31st, when he came under the author's observation and care in the Bicêtre.

September 1.—Patient was very excited and anxious; scarcely replied to questions; desired to die, but at the same time expressed a fear of eternal damnation. He ate little, wept continually, and slept not at all. On the next day he was visited by a priest, and brought under "strong religious influence," which influence was actively and zealously exerted upon him for eight days without the knowledge of the author. In spite of his delirious condition he was permitted by the priest to receive the communion and extreme unction on the 8th and 9th of September. He had been steadily growing worse, and had steadily refused to answer the author's questions, when on the 10th the latter found him in a profound sleep, which was said to have lasted from the time of receiving the sacrament on the day before. The priest was forbidden to visit the wards in future unless officially requested.

September 11.—Still sleeping, lying on his back; the limbs are stiff, and the breathing quick, and diaphragmatic rather than costal; pulse 72; eyelids closed and slightly winking; jaws tightly shut. Absolute immobility. Sensibility seems to be blunted. Several involuntary discharges of urine. Sinapisms to the legs; soup administrated through an œsophageal bougie.

September 12–20.—Stiffness and contraction of the body disappear entirely, and are replaced by a complete paralysis. Respiration rises from 24 to 38; pulse sinks from 72 to 58; anæsthesia of skin increases; sluggishness of the bowels and emaciation commence. Blisters to calves and thighs. Tart. antimony gr. 2¼ by the stomach-tube; two litres of soup, with the yolks of four eggs to the litre, in the same way.

September 20–30.—Respiration 38–48; pulse 54–62. Frequent involuntary urination. No stool. Deep pricks with a needle upon the inside of the thighs provoke some slight reflex movements, winking, and a few tears. His condition is that of half-consciousness, with a certain degree of volitional force. Thus, when he thinks he is not watched he slowly reaches his left hand out of bed, seeks for his sheet, takes it and throws it over his head. The attendant throws it back, but the same act is repeated when the patient ceases to hear any stir near him. The author thinks he imagines himself dead, or wishes to simulate death.—Castor-oil, ℥ ii; ½ litre very concentrated *café noir;* a seton in the back of the neck; various medicated clysters; suppositories containing aloes; mustard-baths; nourishment as before.

October.—Emaciation continues to increase; respiration 56, and pulse 44; temperature, $37\frac{4}{10}$–36. Stool every ten or twelve days. Face pale, with a very noticeable expression of repose and serenity.—Electricity; scourging with nettles; capsules, containing from one to three drops of croton-oil, introduced into the rectum; three litres of soup daily, with yolks of four eggs to the litre. Striking failure of all treatment.

In accordance with different opinions given in consultation by the several members of the medical staff, the sulphate of quinia was first administered for six days, 15 grains daily, without success. Then, after a few days of rest, the head was shaven and a large blister applied over the entire scalp, November 4th. In the night he suddenly sat up and called out in a voice broken with sobs, "My God, my God! have mercy on me; I am lost; I am dying. My brothers, pray to God for my soul's repose." He was distinctly seen and heard by those near him, but, before the watcher could light his night-lamp, the patient had sunk back upon his pillow in his former death-like stiffness. His eyelids were closed, his countenance quiet; he seemed to be in a deep sleep.

If this man had committed a great crime before his admission to the hospital, the question of simulation would have been very hard to decide.

At the visit on the following morning nothing unusual was noticed. On the 12th, friction with tartarized antimony upon the hairy scalp was begun. Erysipelas followed, which nearly cost the patient his life. From this period the expectant treatment was faithfully carried out. At 9 A. M., one litre of good chocolate was administered; at 1 P. M., one litre of very good sweetened milk; at 6 P. M., one litre of soup, with yolks of four eggs, and a glass of wine.

December.—Decided improvement in physical condition. Respiration fell 32, pulse rose to 64; temperature became almost normal. The face was fuller and of better color; the muscles of the arms and legs were less relaxed, and a stool was passed every night. But the same immobility, the same stiff position upon the back, the same continuous sleep, persisted. Upon lifting the closed lids the eyeballs could be seen turned upward and inward.

January, 1869.—Improvement. Cutaneous sensibility mostly restored; pricking occasioned muscular contractions, trembling, and very rapid winking, as well as a certain expression of anxiety in the face. Some increase of sensitiveness to surrounding objects; thus, when stripped naked, he brought his left hand forward to cover his privy parts. He persisted in his old trick of folding his sheet over his head whenever the nurse neglected to fasten it down.

February 1.—Etherization was effected, but the sleep was very slow in coming, and was very slight and transient. He made motions as if wishing to sit up, opened his eyes wide, stared about in an amazed way, and laughed stupidly. This lasted some eight or ten minutes, and he sank back into his old state, without having answered a word to all the questions addressed to him.

On the 4th, a bottle of good champagne was given, with no especial effect.

Hashish was then given during fourteen days in doses of thirty-five centigrammes of the extract (over five grains) daily. No effect was noticed, but the patient again began to emaciate rapidly, and the experiment was dropped.

A celebrated magnetizer was permitted, at his own request, to manipulate over the patient for an hour, but with no result.

The quantity of wine and food was increased, but the patient sank steadily, and, on the 12th of April, died of bilateral pneumonia.

The autopsy was made with great care, sixty-four hours after death. The following were the principal points observed:

1. A very extensive and well-marked decoloration of the white and gray nervous matter; so striking was this, that the entire mass of nerve-tissue looked as if it had been washed out, and the vascular ramifications had apparently disappeared even from places where they usually abound. This is decidedly the most prominent and really characteristic circumstance observed in the autopsy. The extraordinary anæmia, affecting the entire extent of the nervous centres, compels us to classify the pathological condition in a category by itself, at the opposite pole to those special changes which are usually found at autopsies of general progressive paralysis.

2. The isolated atrophy of certain cerebral convolutions in various regions, constituting an actual navel-like depression on the surface of the cortical substance, is one of the most important facts in relation to the pathological anatomy of the insane; a subject as yet so imperfectly understood. This kind of atrophy, which is always distinguished by a more or less complete local disappearance of the nerve-cells, is always associated with symptoms of mental disease.

3. An important point is the presence of single islands of partial vascularization, very pronounced, and quite independent of each other, scattered here and there in the parenchyma of the cortical substance. These were plainly "permant foci of circulatory activity," and the nerve-elements at these places must have been the source of constant erethism.

The character of the appearances which predominated may be assumed to depend on a sort of inanition and collapse, resulting from deficient fullness of the circulation; while the excess of vascularization in single spots may have given an excessive and despotic supremacy to some parts of the intellect, thus helping to bring forth a series of autogenetic hallucinations, of persistent and fixed character. It is not unnatural to infer a connection between the anatomical facts and those observed clinically.

"In the course of the disease," said the author, in conclusion, "I often remarked to my pupils as follows: This man considers himself dead, or wishes to pass for dead; he has assumed the immovable attitude of a corpse in the grave, and will not stir from it; he does all this, as an act of sacrifice to God; he would let himself burn in his bed, if we set fire to it. And yet he is perfectly able to execute voluntary movements. He used to reach forth his hand, when he thought himself unobserved, and fold his sheet about his head. This was an act of intelligence; this showed the entire absence of catalepsy, and proved that his state was only an apparently unbroken sleep, maintained by a really extraordinary force of will."

The œsophageal sound had been introduced some 700 or 750 times, without causing the slightest injury to the mucous membrane.—*Wiener Med. Wochenschrift*, Nos. 101–103, 1869.

ON THE THEORY OF COUNTER IRRITATION.

By Dr. Anstie.

If ever the course of a scientific discussion justified those who inaugurated it, I think it must be allowed that the controversy stirred up by Dr. Dickinson and myself, in the course of last year, upon the subject of counter-irritation, has justified us in commencing it. It has been shown that there is no clear understanding, among the orthodox upholders of the practice, either as to the agents which may rightly be called counter-irritants, as to the circumstances in which they should be used, or as to the method of their operation. For my own part, I have been fairly startled—prepared as I was for a good deal of discrepancy in the arguments by which our sceptical objections to the popular theory and practice would be met—by the wide divergence of views that is now shown to have been all along concealed under the external appearance of agreement in the orthodoxy part. And I have no doubt that Dr. Dickinson, no less than myself, esteems it one of the most fortunate results of the discussion, that we have succeeded in eliciting so logical an analysis of the question, from the conservative side, as has now been contributed by Dr. James Ross; whose previous writings on the subject had failed to attract as much attention as they deserved. Dr. Ross is a firm believer in some of the traditional virtues of counter-irritants which have been most strongly impugned by Dr. Dickinson and myself. But he has drawn a clear distinction between the clinical facts, which are capable of different explanations, and the theories which by the older schools of medicine were assumed as necessary to account for them; and he has shown that these theories are inconsistent with each other, and must be superseded by something more in accordance with modern principles of scientific reasoning. Whether he has succeeded in supplying this desideratum is another matter, which will form one of the topics for discussion in the present paper.

For many years past I have felt profoundly dissatisfied with the results of the routine use of the agents most commonly included under the phrase "counter-irritants;" and still more dissatisfied, if possible, with the theories upon which that practice appeared to rest. In the first place, it appeared to me that such an enormous aggregate of suffering was inflicted upon patients, by the use, more especially, of blisters, as could only be justified by very stringent evidence of its high utility. Secondly, I had observed a large number of cases in which a homœopathic or some other indifferent treatment had been followed by equally good or better results, in inflammatory diseases, than were obtained by even the most sedulous use of counter-irritation. And thirdly, I could come to no other opinion, after the best study which I could give to the orthodox theories of counter-irritation, than this: that at bottom they rest on no better foundation than a kind of general idea—perfectly metaphysical in its origin—that *what hurts one tissue or organ must benefit the neighboring structures*. I by no means expected, however, to find that nothing could be said on behalf of counter-irritation; indeed I presumed that the rude scepticism of my assault would probably provoke a severe retort from some of the distinguished representatives of conservative ideas in medicine, and I was by no means sure that that answer might not be a complete extinguisher. Under these circumstances it was a considerable comfort to me to find that Dr. Dickinson (whose first paper, published before my own, I had not seen until mine was nearly written) had been thinking, with even more audacious scepticism than my own, on the subject of counter-irritation. There is, however, an important difference between my own position and that of Dr. Dickinson, and that of Dr. Dauvergne, whose paper (reprinted in this journal from the *Bulletin de Thèrapeutique*) represents the extreme of opposition to the use of blisters. Both these latter authors appear to dispute the likelihood, if not the possibility, of any effect being produced on a local disease so far removed from the part to which we apply counter-irritation as an inflamed lung, for instance, is from the skin to which blisters are so commonly applied for its relief. I, on the contrary, do not absolutely deny that any influence may be exerted on organs thus far removed from the site of "counter-irritation," or that this effect may occasionally prove beneficial. What I do dispute is, that there is any such certainty in the method as to justify our employing it, except in cases where the part "irritated" and the organ intended to be acted on are in recognizable communication with each other through the medium of the nervous system, and in a mode strictly limited to the production of merely *stimulant effects*. I have spoken of the hope that we can control inflammations of the lung or the bowel by blisters, etc., as "ludicrous;" but it must be well understood that the ridicule is intended to attach, not to the idea that such an influence may be physiologically *possible*, but simply to the notion that we can *direct it and graduate it at will*, while taking no further precaution for the purpose than that of simply placing the blister on a part of the skin *opposite* to the organ we wish to reach. That idea seemed to me, and it seems still, both ridiculous in a scientific and disastrous in a practical point of view. And, as a final justification against the imputation of an undiscriminating hostility to the use of what is called counter-irritation, I may recall the fact, that my paper in the *Lancet* was specifically directed against the "*popular idea of*" that practice. That paper was read before the Medical Society of London, and in the very lively discussion which followed a sufficiently accurate foreshadowing was given of the confusion, both as to theory and rules of practice, which the more formal essays published on the other side have since shown to exist among the ranks of the upholders of the frequent use of counter-irritants.

The argument propounded by Dr. James Ross stands so clearly apart from those advanced by any others of the recent defenders of counter-irritation as a practice generally applicable on the large scale to the treatment of disease, that it must be reserved for separate discussion. The only feature which it possesses in common with the hostile commentaries on my original paper which were made by speakers at the Medical Society, by a reviewer in the *Dublin Quarterly*, and by Dr. J. Risdon Bennett in his very able paper in the *Practitioner* of June, 1869, is the small account which it takes of the positive suffering inflicted by the severer forms of counter-irritation (which are those most commonly employed), and of the very real dangers to health, and even life, which they unquestionably involve. Upon this point, I cannot help criticizing, with some severity, every section of the party which upholds the frequent use of these agents. I do not know whether either Dr. Bennett or Dr. Ross have ever personally endured the infliction of a blister, kept open for a week or so, but I have; and I can speak to the fact of its entailing an amount of pain and inconvenience to which no patient ought to be subjected except for very good reasons. But the matter is far more serious in regard to the effects of this treatment, when recklessly applied to children and delicate women. Even if we grant that Dr. Bennett is justified in dismissing, as a mere "bogie," the suggestion of Dr. Dickinson that infective processes may be set up by the artificial wound, it is none the less true that delicate children with broncho-pneumonia may be killed with a single blister, and that weakly subjects of post-partum peritonitis may be easily extinguished by the zealous use of the turpentine stupe: yet who that has made acquaintance with average practice will deny that numbers of medical men still lean with blind dependence upon such remedies in such cases? They are the refuge of the destitute, the one haven that seems open in stress of dirty weather!

Let us now examine the counter-irritation theories of the orthodox, expressly excluding Dr. Ross from that respectable company. Those who accuse young medicine of wanton heresy in this matter seem to think that the old system was self-consistent, and was merely the practical working out of a principle which equally holds good under the ancient and the modern physiology. I think it is not difficult to disprove this idea. There are, in fact, two main theories which have been vaguely held at various times; now one, and then the other predominating in the minds of the adherents of counter-irritation; namely, the theories of *depletion* (in a mainly mechanical sense) and of *derivation* or *revulsion*, which was for the most part a vitalistic and ontological idea. The first of these is that adopted by Dr. J. R. Bennett in his able article above mentioned, and I must confess that it appears to me to offer the only respectable defense that can be adduced for the commonest of all uses of counter-irritation; viz., the employment of a severe skin-irritation to relieve a deeper organ embarrassed with acute inflammation. It rests on the maxim, *Ubi irritatio, ibi fluxus*, and presumes that the congestion produced by irritating the skin implies the withdrawal of so much blood from the part which is unduly engorged. Taken in this sense "counter-irritation" includes, of course, not merely blisters, turpentine stupes, mustard plasters, and other *painful* applications to the skin, but also mere hot fomentations, and all other means by which the skin can be artificially congested. I shall not stop here to scrutinize the clinical facts upon which Dr. Bennett and those who think with him rely for proof that such external remedies do reduce the congestion of deep-seated organs, and thus lessen inflammatory processes, hasten absorption, etc. That criticism must be deferred to a future paper. But granting for a moment the therapeutic fact, and granting to the full that hot fomentations, equally with blisters, have the power to produce more or less considerable skin-engorgement, I have to ask a further question: How can you assure us that the only common property of blisters and fomentations, in virtue of which they can be supposed to relieve the congestion of distant organs, is that of congesting the skin? It is at least abundantly conceivable that the effective common property is that of stimulating the peripheral nerves and (by reflex action) the vaso-motor nerves of the distant organ. On the other hand, there exists one well known and most powerful objection to the depletion theory, namely, the enormous difficulty of supposing that the depletive action would be exerted to any greater extent upon the inflamed organ than upon the remainder of the circulation; while, unless this were the case, it is impossible to understand how the depletion actually exerted on the organ we desire to reach could be sufficient to cause any appreciable relief from mechanical pressure. Let us try to realize the facts, approximatively. We will suppose that a pneumonic lung, in the stage of red hepatization, contains from six to eight ounces more blood than usual—surely not an extravagant hypothesis. We will assume that by the application of a blister, six inches square, we are able to at once overfill the vessels of the skin to the extent of three or four ounces, and during the ensuing twenty-four hours to extract one ounce of serum from them—assuredly a liberal computation. What follows? why, that we withdraw from the arota and vena cava the above named bulk of blood, scarcely any of which will come directly from the inflamed lung, the quantity of blood in which will therefore practically be only diminished in the degree of its proportion to the general mass of circulating fluid. But even this gives too flattering an estimate of the effect likely to be produced: since the paralytic dilatation of the vessels of the inflamed organ may only too probably persist, in which case one must suppose that the part would quickly reacquire its exaggerated complement of blood under the necessary conditions of mechanical pressure within the chest.

Such are the difficulties of the depletion theory at one end of the scale, in the case, namely, where the inflamed organ is anatomically so remote that no direct relation can be traced between its vessels and those of the skin which we irritate. A precisely opposite difficulty occurs where the organ which we aim to affect is very near, and pretty closely connected (vascularly) with the skin on which we act: here we may indeed affect the inflamed organ, and that very powerfully; but how can we assure ourselves that the paralytic dilatation induced in the skin-vessels will limit itself accurately to them, and may not extend to and aggravate the condition of the deeper vessels? Doubtless we may figure to ourselves a kind of typical case, in which an irritant, acting upon skin supplied by vessels connected with the vascular network of the diseased organ, shall be just far enough from the latter, and mild enough in operation, to affect *only* the skin-vessels, converting them into dilated reservoirs into which the blood from the engorged part may overflow. And upon the depletion theory this class of cases, one would suppose, must include all the instances in which counter-irritation is useful. But it would then altogether fail to explain the asserted benefits of the treatment in pneumonia, or in affections of the ovaries, etc.

[To be continued.]

A NEW medical society has been established in Washington, to be called the "National Medical Society of the District of Columbia." By the constitution, right of admission is granted to women and colored folk. Indeed, it seems that a charter could not have been obtained from Congress on any other terms.

FOREIGN BODY IN THE UTERUS: UNIQUE CASE.

M. Foltz has brought before the Société de Médecine de Lyon the case of a woman, the mother of several children, who stated that, wishing to get rid of the product of a two months' conception, she had introduced a female catheter into the uterus. Abortion followed, but the instrument remained. In vain did she look for it in the clots, and she applied to M. Foltz to have it removed. It turned out, subsequently, that the catheter had been introduced by a midwife, whose name the patient kept secret. In spite of the most minute search, the author could not feel the foreign body, and he heard nothing of the woman for the next four months, when she returned, and said that she felt a tumor in the umbilical region. On examination, the prominence was found hard, rounded, of small volume, and disappearing under pressure, as would an umbilical hernia. It could easily be surmised that the projection was formed by the extremity of the catheter. With M. Pétrequin, who was called in consultation, it was decided to dilate the cervix with the sponge tent, and that, the patient being in the erect posture, search should be made for the foreign body through the genital organs (the tumor could not be felt when she lay down); and, failing in these endeavors, that the catheter should be extracted through the abdominal walls. The operation was undertaken as soon as the dilatation had been sufficient; but the finger introduced into the uterine cavity could not detect the foreign body. By a further dilatation it was found that the upper part of the catheter could only be felt at the umbilicus when the patient was standing, and after she had moved about for some time; and that the handle of the instrument was fixed in the anterior wall of the uterus, or rather between the latter and the bladder in the utero-vesical septum, on a level with the os internum of the cervix, the anterior lip of which was considerably thickened. One finger placed in the vesico-uterine cul-de-sac, and another at the umbilicus, detected both ends of the catheter. M. Pétrequin, whilst the patient was standing, and supported by two assistants, slit up the cervix, and although the section of the neck was considerable, the operators were much astonished at failing to make out the foreign body. Two hours were consumed in the search, but to no purpose, and the rest of the operation was put off to the next day. The abdominal walls were then incised, whilst the catheter was pressed upwards from below, and at length extracted, after great difficulty. The patient made a good recovery. The case is fully described in the *Lyon Medical* of December 19th, '69.

M. Foltz remarks that the foreign body had obliquely perforated the anterior wall of the uterine neck, had then glided between the uterus and the bladder, pierced the peritoneal vesico-uterine cul-de-sac, and had risen between the intestinal convolutions up to the umbilicus. After the abortion, and the contraction of the uterus, the catheter had traveled, its handle had passed through the uterine wall, and had finally rested in the vesico-uterine septum. When the patient lay down, the handle or inferior extremity of the instrument became concealed behind the bladder, and the upper extremity was surrounded by the small intestines. When standing, however, and when the patient had for some time walked about, the uterus fell, and the catheter assumed the direction of the axis of the upper outlet of the pelvis, one extremity being felt at the umbilicus, and the other pressing against the uterus. Hence the difficulties of diagnosis and operation. M. Pétrequin considers this case unique, after having taken great pains to search through many medical periodicals.

Some members expressed doubts as to the likelihood of the perforation of the anterior wall of the cervix. Some thought the catheter had slipped into the bladder, and some that the foreign body had perforated, not the uterus, but the vesico-uterine cul-de-sac. The case, at all events, is suggestive, not only in a medical, but also in a moral point of view.—*Lancet.*

ON THE USE OF ELECTRICITY IN OBSTETRICS.

DR. de St. Germain, Surgeon to the Lying-in Hospital, has recently been conducting a series of experiments with electricity, as an obstetric agent, and he thus sums up the results in a communication brought forward at the Imperial Society of Surgery:—

1. We have not been able in any one case to produce uterine contractions, when they had not already appeared of their own accord.

2. Whenever labor had commenced, and the contractions were succeeding each other at intervals of from fifteen to twenty minutes, the application of electricity to the lateral walls of the abdomen produced a considerable amelioration of the uterine contractions, after the lapse of only ten minutes.

3. We have also stated that each contraction excited by electricity was much longer and more painful than the others.

4. The dilatation of the cervix seemed to progress constantly with rapidity under the influence of galvanic excitement.

5. In all the cases the expulsion of the placenta immediately followed that of the child.

6. In two instances only we observed a slightly bluish hue on the skin of the child; but this might be attributed to cyanosis, brought on by circular constriction.—*Lancet.*

TREATMENT OF HÆMORRHOIDS.—M. Richet has published, in *L'Union Medicale*, a clinical lecture "On Hæmorrhoids," in which he advises the use of forceps, brought to white heat, to cauterize piles in several sections. The Professor gives a history of the various modes of operating which have been proposed, but omits to mention Houston's nitric acid plan, and the manner of seizing hæmorrhoidal tumors with a clamp, cutting them off, and arresting hæmorrhage either with nitric acid or the actual cautery —an operation successfully practiced by many British surgeons.

Pharmacy and Chemistry.

Syrup of the Albuminate of Iron and Soda.—A preparation bearing the above name, with the synonyms, "blood food," and "nitrogenized iron," is furnished by Chapman & Dunks, manufacturing chemists, of Hudson, Mich., claiming to contain iron in the same state of combination in which it exists in the blood. A specimen subjected to chemical analysis by Prof. A. B. Prescott, of the Michigan University, yielded about a grain of perchloride of iron to the ounce—equivalent to 8 minims of the muriated tincture—and contained also common salt, albumen, sugar, and a little free soda. Prof. Prescott, in an interesting report on this preparation presented before the Washtenaw County Medical Society, suggests as an extemporaneous prescription, for a fluid ounce mixture:

White of one egg.	
Sugar	ʒss.
Tincture of chloride of iron	ʒss.
Solution of soda,	
Water, of each q. s.	

Mix the egg with the sugar, adding water sufficient to effect solution; add the tincture and then just sufficient soda to dissolve the coagulated albumen; finally, complete the measure by the addition of water.

The mixture is not unpleasantly astringent even when it contains one-fourth tincture of the chloride, and when of half that strength is stated to be quite agreeable to the taste.

Light Sulphate of Quinine.—An article bearing the above label has been tested by Louis Strehl, of Chicago, and found to consist of hydrochlorate of cinchonia. This salt resembles the sulphate of quinia so closely in appearance that it may be easily substituted for it fraudulently, as has been done in the present instance. The manufacturers of light quinine are "Lord Bros., Ludgate Hill, London."

EXCIPIENT FOR PILLS.—As a good general excipient for pills, the following is recommended by S. B. Turney in the *London Pharmaceutical Journal:*

℞. Pulv. tragacanthæ	ʒij.
Glycerini	ʒvj.

Mix in a mortar and put in a covered pot. It soon becomes a firm, tenacious mass, keeps well, and from its adhesive quality does not render a pill mass too bulky.

KRYPTOPHANIC ACID—A NEWLY-DISCOVERED CONSTITUENT OF THE URINE.—Dr. Thudicum has recently described a new acid discovered among the nitrogenous constituents of the urine, to which he has given the name of kryptophanic acid. The formula of the compound is C_{10}, H_{18}, O_{10}, N_2. Its salts are in general soluble in water and insoluble in alcohol. Mercuric kryptophanate is insoluble in water; hence, in the ordinary volumetric process for the determination of urea by solution of mercuric nitrate, the results obtained are uniformly too large.

OXIDE OF SILVER—AN UNFORESEEN RESULT.—A physician recently made the following prescription:

Oxide of silver	gr. xlviij.
Muriate of morphia	gr. j.
Extract of gentian, q. s.	

M. Make 24 pills and coat with silver.

The pills were prepared *secundum artem* and duly delivered to the patient, a lady, who placed them for safe keeping in her bosom. In the course of an hour an explosion occurred; the patient's underclothes were badly scorched and she herself severely burned. The accident suggests caution in prescribing this compound of silver, whose unstable character is well known to chemists. The oxide is readily reduced by essential oils, as in one of the common processes for silvering in which the oils of cloves and of cassia are employed. It also forms a dangerous fulminating compound by the action of ammonia, the fulminating silver of the chemist. These are facts that ought to be known to both prescriber and compounder, in dealing with the compounds of silver. Other vegetable extracts have manifested in a similar manner their "incompatibility" with the oxide of silver, and it would be better to employ some excipient not likely to contain a deoxidizing agent.

Editorial.

HYPODERMIC INJECTIONS.

It is now something more than ten years since the practice of introducing remedial agents under the skin for the relief of pain or the cure of disease, came into general use. It has passed through the various stages of suspicion, enthusiastic adoption, absurd extreme in its application, and finally of distrust in the minds of extremists, and now has taken its place as a most valuable method of exhibiting certain remedies, within proper limits, among the other resources of the profession. Occasionally some experimenter attempts to widen its sphere of usefulness by applying it to the general treatment of some disease, as lately, to the exhibition of mercury in syphilis, but the objections in the majority of cases exceed in number the advantages gained, and we find practically that the useful hypodermic administration of medicines is confined to those cases where remedies by the mouth are contraindicated from some cause, or where it is desirable to induce prompt action of a remedy. Generally it is applied for the relief of pain, and the promptness and facility with which anodynes produce their effects when applied thus is truly marvelous. At first it was supposed the dose thus given should be larger than when taken into the stomach, the directions published stating the quantity requisite to be from 50 to 100 per cent greater than by the ordinary method. It is singular how long and persistently this opinion held ground, before the fact was recognized that owing to the more perfect and prompt absorption of the drug, when diffused in a concentrated solution in the sucutaneous cellular tissue, than when taken into the stomach, a far smaller amount was needed to produce a decided impression than the common dose. The misapprehension of this fact, in the exhibition of the powerful narcotics, has led to fatal results repeatedly, and often to alarming toxic effects; indeed, it is surprising that death has not more frequently resulted from the grain doses of morphia which were fearlessly and constantly injected, producing profound narcotism lasting for from twelve to sixteen. hours. It is with a shudder that we now recall the danger to which patients in our own experience have unwittingly been exposed, although, providentially, no accident has resulted.

On the other hand, it is surprising to what an extent severe pain obtunds the sensibility to powerful doses of narcotics thus administered. We recall a case of subacute inflammatory rheumatism in which the suffering was intense, and morphia, *per orem*, seemed to exercise no beneficial effect, even in large doses, but hypodermically a grain twice a day afforded quiet and comfort. A grain was the smallest quantity that would answer, as we only attained this dose after cautions experiment; for a few days as high as two and a half grains daily were required. This, it will be observed, is a far less quantity than in divided doses by the stomach would have been sufficient to produce the same constant sedation while the system was under the influence of such acute suffering.

We were led to these remarks by the report of a case which recently occurred in Cincinnati, and was discussed before the Academy of Medicine in that city. The attending physician injected a fourth of a grain of morphia for the relief of pain in a case of severe phlegmonous inflammation of the fauces attended by considerable dyspnœa, with the secretion of a large amount of tenacious mucus which needed to be constantly removed. The amount of tumefaction was extreme and respiration was materially interfered with, requiring a partially voluntary effort on the part of the patient to properly aerate the blood. A quiet sleep followed the exhibition of the narcotic, lasting two and one-half hours, when he awoke voluntarily and conversed, but soon after fell asleep again, and was found dead a few hours later. The attending physician regarded death as resulting from the sudden intervention of œdema glottidis, as he diagnosticated the existence of inflammation of the epiglottis and supposed that there was a similar condition of the larynx. As was very pertinently argued by a member of the Academy, the fact of the existence of this condition of the glottis should have caused the attendant to avoid interfering with respiration by a narcotic, when already the senses were obtunded by an undue amount of carbonic acid gas in the blood, for the removal of which partially voluntary respiration was needed. The voluntary act being stopped by sleep, the benumbed nerves soon failed to transmit the *besoin de respirer*, and life went out.

Here we make the point—the hypodermic administration of morphia places the control of the case beyond the physician's power; the effect is so prolonged that when the stage of danger is reached the action cannot be checked, and consequently alarming results follow. By the stomach, small doses, with transient effect, allow of a change being made or the remedy suspended when the symptoms indicate danger.

We fully appreciate the value of the hypodermic administration of medicine, and apply it constantly in practice. It is a boon of incalculable value to sufferers, when used with care and skill, and it is equally a power for evil when the possible dangers are not taken into account and guarded against.

THE NATIONAL CONVENTION OF MEDICAL COLLEGES.

SEVENTEEN colleges were represented by delegates in the convention, which met in Washington on Friday and Saturday preceding the meeting of the National Medical Association, to consider the necessity and feasibility of improvement in the present system of medical education. A good deal of time was consumed in discussing the importance of a classical education as a preliminary to medical study. Several resolutions and amendments were offered, bearing on this question, but the delegates were unable to agree upon any of them, and finally adopted, as a substitute, the following resolution proposed by Prof. A. Stillé:

"*Resolved*, That while the proposition adopted in 1867 by the convention of delegates from medical colleges, embodies a system of collegiate medical education in the highest degree commendable, and which, if it could be generally carried into effect, would tend to elevate the medical profession, each medical college must, nevertheless, practically decide for itself the requirements to be exacted for graduation, and that consequently, while abstaining from all attempts at dictation, this convention reiterates in the strongest manner its desire that the several medical colleges will, in the changes made from time to time by them in the curriculum of study, endeavor to conform them to the general plan which was recommended by the convention of 1867, and adopted in the same year by the American Medical Association."

As a step toward organizing a permanent Association of Medical Colleges, a committee was appointed to ascertain what colleges are willing to unite with such an association. Delegates from these colleges will meet in April next to decide definitely some of the questions left unsettled by the present convention, and the colleges will stand pledged to abide by their decision. No decisive action was taken in regard to a uniform rate of college fees. The delegates expressed themselves unanimously in favor of a higher standard of medical scholarship.

We may be able, perhaps, to present our readers with a full account of the proceedings of the convention in our next issue, but from the brief account above, it will appear that very little was really accomplished.

AMERICAN MEDICAL ASSOCIATION.

THE Association commenced its twenty-first annual session on Tuesday, May 3d, at Lincoln Hall, Washington, D. C., Dr. Mendenhall presiding.

Dr. Antisell, of the Committee of Arrangements, extended to the delegates present a cordial welcome, and announced the pro-gramme for the week. On calling the roll, it appeared that about 400 members were present, representing nearly every State and city in the Union.

The Committee on Credentials having excluded delegates from the National Medical Society, of Washington, D. C., from the American Academy of Medicine, D. C., Howard University Medical College, Alumni Association of Medical Department Georgetown College, and also from the three hospitals, on the ground, it appears, that they consult with colored physicians, Dr. Reyburn, chairman of the committee, offered a minority report protesting against the action of the committee. Referred to the Committee on Ethics.

Questions in regard to the exclusion of some other delegates from Massachusetts, and of Dr. Cox, of Maryland, were likewise referred.

On motion of Dr. Davis, a new Committee on Ethics was appointed by the chair, consisting of Dr. A. Stillé, Philadelphia; Dr. N. G. Davis, Illinois; Dr. J. N. Keller, Kentucky; Dr. H. F. Askew, Delaware, and Dr. Woodward, U. S. A.

The annual address was then delivered by the retiring President, Dr. Geo. Mendenhall, and was listened to throughout with marked attention. The remainder of the day was taken up with reports of committees and some not very creditable sparring arising from questions of "ethics." In the evening the delegates called upon President Grant, and were received by him in the East Room of the White House.

On Wednesday, a resolution was offered by Dr. Moore, of Missouri, U. S. A., fixing a minimum sum for the fees of colleges that should be allowed representation in the Association. Dr. Selden moved that the sum be fixed at $100. Dr. Yandell opposed the resolution, which was tabled.

A resolution fixing the charge for life insurance examinations at $5.00 was adopted; also a resolution to the effect that the Medical Association have power to control medical education throughout the West.

The Committee on Nominations presented the following named officers for the ensuing year: *President*—Alfred Stillé, Philadelphia. *Vice-Presidents*—J. S. Wetherby, Alabama; Henry Gibbons, California; J. T. Hurd, Texas; Samuel Willey, Minnesota. *Assistant Secretary*—J. C. Tucker, California. *Treasurer*—Dr. Caspar Wister, Pennsylvania. *Librarian*—F. A. Ashford, District Columbia. Place of meeting, San Francisco, Cal.; time, first Tuesday in May, 1871. Adopted.

In the evening the members visited the U. S. A. Medical Museum on Tenth St. At 8 o'clock they assembled to listen to a lecture by Dr. Otis, U. S. A., on excision of joints, which was followed by a lecture on electric lights, by Dr. Woodward, U. S. A., both of which were copiously illustrated by appropriate apparatus, and were listened to with much interest.

On Thursday the Society listened to the report of Dr. Pinkney, U. S. A., who had been sent as a representative to the British Medical Association. Adopted and referred to the Committee on Publication.

A number of reports of special committees were read, but no important resolutions were passed. The Committee on Ethics submitted a majority report adverse to the delegates from various societies in the District of Columbia. A minority report, signed by Drs. Stillé and Woodward, was also submitted, recommending the admission of the delegates aforesaid. The minority report was laid upon the table by a vote of 107 to 85, great excitement prevailing throughout the discussion and the calling of the yeas and nays. In the evening the members of the Association were entertained at the residence of Major Bowen.

On Friday a resolution was presented condemning the practice of apothecaries in renewing, without authority, the prescriptions of physicians. Referred to a special committee.

A resolution declaring Dr. Horace Wells, of Boston, to be the discoverer of anæsthesia, was passed.

Dr. John Sullivan offered the following resolution:

"*Resolved*, That no distinction of race or color shall exclude persons claiming admission to this Association, who are duly accredited thereto." The resolution he supported in a speech, frequently interrupted by hisses and cheers. No action was taken upon it.

The Committee on Ethics, by request, offered a written statement of their reasons for rejecting the delegates from certain societies—the Medical Department of the Howard University in particular—showing that charges of open violation of the national code of ethics had been clearly substantiated against members of these societies.

The whole discussion of the question was carried on with so much obvious bitterness of feeling on both sides that the Association cannot be said to have got any glory to itself by its action in the matter. We hope that future meetings of the Association may be marked by a better spirit, less of personal animosity, and more of zeal for the scientific advancement of the medical profession.

PUBLICATIONS RECEIVED.

THOUGHTS ON CHRONIC INVERSION OF THE UTERUS; with special reference to the Substitution of Gastrotomy for Amputation of the Uterus. By Henry Miller, M. D., professor in Louisville Medical College. Louisville, Ky. Pp. 42; 8vo.

POPULATION; its Law of Increase. By Nathan Allen, M. D. Lowell, Mass. Pp. 32; 8vo.

REDUCTION OF DISLOCATIONS. By Wm. Warren Greene, M. D., Professor of Surgery in Medical School of Maine. Pp. 11; 4to.

RELATIVE DANGERS OF ANÆSTHESIA BY CHLOROFORM AND ETHER, from statistics of 209,893 cases. By E. Andrews, A. M., M. D., Professor of Surgery in Chicago Medical College. Pp. 12; 8vo.

SPINAL IRRITATION. By Wm. A. Hammond, M. D., Professor in Bellevue Hospital Medical College. Read before New York County Medical Society, January 17, 1870. Pp. 42; 8vo.

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DETROIT
Review of Medicine and Pharmacy.

Vol. V. JUNE, 1870. No. 6.

NOTES ON TYPHOID AND TYPHUS FEVERS.

By P. Stewart, M. D., of Detroit.

I.—Tyhphoid or Enteric Fever.

In the year 1858, an epidemic of typhoid or enteric fever broke out along the banks of Lake Erie, some three or four miles inland, which committed great ravages during that summer and fall, disappearing at the approach of winter, and returning again, though less violent, in another locality, for two successive seasons. Sporadic cases were met with for several years after. The disease prevailed chiefly in the older settlements, among wealthy and well to do farmers; while those in newer places, a few miles distant, where *malaria* was rife, were seldom affected. There were two main roads running parallel with the lake, two and a half miles apart; along these, on each side, where the first pioneers settled, the land for miles was under cultivation. At the back of each farm the woods were left standing, forming a strip three-quarters of a mile wide, extending the whole length of the clearing. It was observed that families living near these woods were first attacked, more particularly when the houses were surrounded by vines, shrubbery or fruit trees.

The age of the patients ranged from fourteen to forty-five, the very young and old seldom suffering; when children did, it was in a mild form; sex gave no immunity.

The first case was that of a young woman, twenty years of age, who was brought home in April, from a distance, and died a few days after with well marked typhoid symptoms. In June, several cases appeared, and in July and August the epidemic reached its height.

At first the patient complained for several days of indisposition, headache, languor, etc., with occasional rigors, described as a creeping, chilly sensation, as if cold water was poured down the back; at night he was slightly feverish and restless. Sometimes a severe chill preceded the full development of the fever; in others, the disease progressed slowly and insidiously, till it was firmly established. During the first week all energy seemed lost; there was an intolerance of light and sound; thirst, tongue white, skin hot, eyes bright, pupils partially dilated, countenance pale, pulse slightly accelerated, quick and soft; wakeful and restless at night; occasionally vomiting and diarrhœa. Second week, thirst increased, tongue covered with a grayish fur in the centre, often dry; skin hot and dry, pulse frequent and quick, somnolence, countenance anxious, often a red spot on each cheek. About this time rose colored dots broke out over the abdomen, stomach and thorax, and continued throughout, fading upon pressure; often disappearing and returning; also, pain and gurgling in the right iliac region. Toward the end of the second week or beginning of the third, delirium, more or less severe, followed by coma; the tongue and lips became dry and parched, covered with a black crust, often cracked, and black sordes around the teeth; breathing labored and breath offensive; bowels loose, with fœtid discharges; urine scanty, high colored, and sometimes ammoniacal; eyes sunken, body wasted, and great prostration; when comatose, the pupils were contracted. Fourth week, exhaustion gradually increasing, countenance of a dusky tint, eyes dull and vacant, features pinched and wasted to an extreme degree; muscular twitchings of the face and hands, hiccoughs, low muttering delirium, picking at the bed clothes, sliding down in the bed, discharges from the bowels frequent and putrescent, tympanites; sometimes perforation or hemorrhage from the bowels or uterus, followed by death.

The foregoing were the most prominent symptoms, more or less violent in different patients, though not all present in every case. In some, the disease ran so mild a course that none were very marked. The attendant secondary complications were in the following order of frequency, viz: Enteritis, gastritis, bronchitis, hepatic derangement, pneumonia and phrenitis.

In those who recovered, signs of improvement showed themselves between the nineteenth and twenty-fifth days, rarely later. The first favorable symptoms were decrease in frequency of pulse, and of tenderness in the iliac region; a furrow along the centre of the tongue, with slight moisture of the edges and moisture of the skin, followed by perspiration, occasionally epistaxis. Relapses frequently occurred, and were considered unfavorable, though not always fatal.

Favorable Symptoms were, continued mildness of the disease, moderate diarrhœa, urine increased, epistaxis, moisture of tongue, decrease in frequency of pulse, and profuse perspiration, commencing about the end of the third week.

Unfavorable.—Diarrhœa from the beginning, and increasing; severe type of fever, vomiting, enteritis, fierce delirium and phrenitis, great prostration, rapid pulse, lethargy, relapses, long continuance of disease, hiccoughs, tympanitis and subsultus tendinum.

Fatal.—Extreme exhaustion, livid countenance, features pinched and wasted, eyes dull and vacant, low muttering delirium or deep coma, muscular twitching of the face, picking at the bed clothes, sliding down the bed, involuntary and putrescent evacuations, hemorrhage from the bowels or uterus, and perforation.

The mortality, at first, was one in ten, and gradually decreased to one in twenty. This disease, though epidemic, was evidently contagious, from the fact that friends from parts where it did not prevail carried it home with them.

Almost all kinds of treatment were tried; each had its advocates and failures. That which I found most effective was something as follows: First, an emetic of ipecac, then a cathartic of pulv. rhei., mag. carb. and chlo. hyd., or ol. ricini with tr. opii., if there was diarrhœa; after that, a mixture composed of ammo. hydrochlo. gr. iij., pot. nitrat. gr. ij., tr. camph. co. gtt. x., tr. ipecac., tr. digita. aa. gtt. v., aquæ camph. q. s., to be given every four hours, and pulv. Doveri. gr. v., morph. sulph.

gr. ¼, chlo. hyd. gr. ij, or hyd. c. creta gr. v., to be taken at night. When necessary, the bowels were moved by castor oil. The patient's room was darkened, well ventilated, and all noise prohibited. Cooling, effervescent and acidulated drinks were allowed, also barley and toast water, whey, milk, flax seed tea, slippery elm bark and marsh mallows.

Second week, the following prescriptions: R. pulv. Doveri. gr. iij., hyd. chlo. gr. ss., or hyd. c. creta gr. j., pulv. digitalis gr. ij., or R. acidi tanici gr. iij., acidi nitrici dilut. gtt. v., tr. camph. co. gtt. xv., tr. opii. gtt. v., aquæ cinnamomi q. s., or R. acidi sulphurici aroma. gtt. v., tr. digitali., tr. opii. aa. gtt. v., spts. ether. nit. gtt. x., aquæ camph. q. s., every four hours. These were sometimes used alternately—the two last when diarrhœa was present. Cold applications to the head, tepid sponging of the body with whisky and water, and same drinks continued; cups, dry or wet, over the right iliac region, or wherever there was pain.

Third week, powder continued, with addition of ammon. carb. gr. ij., also sponging, turpentine stupes, and sometimes stronger counter-irritants, were applied over the abdomen; when comatose, the head was shaved, cupped and blistered. The following mixture was now given, if the patient was much prostrated: R. acidi nitro-hydrochlo. gtt. v., tr. nucis vomicæ gtt. v., tr. opii. gtt. vij., tr. serpentar. gtt. x., infus. auranti. ʒj., aquæ menth. pip. q. s. Another powder, which was found beneficial in many cases, was, R. bismuth. tris-nit. gr. v. to x., pulv. ipecac. com. gr. iij., hyd. chlo. gr. ss., three times a day. Nourishing diet, such as beef tea, chicken soup, etc., was ordered. When signs of exhaustion appeared, pale brandy and port wine was given, at first sparingly, then gradually increased. Stimulants, though imperatively demanded and of great benefit, were not as well borne in this as in typhus; their effects required watching. With the exception of relieving urgent symptoms as they arose, this treatment was continued throughout.

In the later stages many varied and severe complications set in, which had to be met by appropriate remedies. In hemorrhages, tannic acid and sugar of lead were given, either *per orem* or *anum.* A combination of tannic acid, brandy and opium was found very efficacious. Quinine was at first freely used by many, under the impression that the disease was malarious. In my experience it invariably aggravated all the symptoms; the tongue became red and dry, and the pulse more frequent. The internal use of turpentine, so highly lauded by Wood, was given a fair trial, but failed completely. Disinfectants were principally chloride of lime and zinc. Duration of the disease, from three to six weeks, but some change always took place in the fourth week.

II.—Typhus Fever.

During the summer of 1854 a disease, which proved to be typhus fever, made its appearance in the neighborhood of a village five miles beyond my usual field of practice, which, in a short time, proved fatal to a number of those attacked. This created considerable alarm in the vicinity, and as the doctors in attendance seemed unsuccessful, others were sent for from a distance, among them myself. Fifteen cases, confined to four families, all the adult members in each being seized, came under my care; ten of these became convalescent. As I then left for New York, the remaining five were put in charge of another physician.

As the fever ran a regular course, with the usual pathognomonic symptoms, varying only in severity, forming the *gravior* and *mitior* of authors, I shall merely mention the principal vital phenomena, without entering into details.

The premonitory symptoms were those of fevers in general, viz: slight pain in the head, neck, back and muscles, thirst, languor, and loss of appetite, continuing from a few hours to three or four days; then a chill, followed by fever, ushered in the disease. During the first week there was an aggravation of all the foregoing symptoms; the patient grew very restless and complained of the severity of the pains; one or more of the internal organs became congested, most frequently the lungs, liver or brain; generally there was more or less cough, with hepatization of the lower and posterior portion of the lungs. The secretions were partially arrested, mouth dry, tongue covered with a thick brownish fur, skin hot and dry, bowels constipated, urine scanty, pulse full and frequent, ranging from eighty to ninety-five; breathing heavy, conjunctiva injected, and pupils partially contracted; the general expression of the countenance was that of fear, pain and excitement. Between the fourth and seventh days irregular, dark red spots made their appearance on the thorax and abdomen, and continued throughout the disease, becoming darker as it progressed, and varying in numbers according to the severity of the fever; at first they disappeared upon pressure, but gradually became more prominent until they formed complete petechiæ.

The second week was marked by delirium, more or less violent, followed by lethargy and even coma; pulse decreased in frequency, tongue swollen and covered with a thick, darkish, dry fur, often cracked; sordes around the teeth and lips, breathing heavy and breath offensive, bowels still costive, urine scanty, high colored and acid; skin dry and harsh, countenance livid, and pupils contracted.

These were the principal symptoms observed in those cases, varying in severity in different patients. Three of those were of so mild a type that the stages of the fever could hardly be detected; and the spots were so few that unless closely looked for they would not have been discovered; in these, however, it was noticed that convalescence was more tedious than in those recovering from a severer attack, the patient often complaining of indisposition for several weeks after. It would seem as though a sufficient quantity of the poison had not entered the system to arouse the vital energies to expel it, or that the constitution was so strong as to resist its effects; or, perhaps, owing to some previous peculiar condition of the blood.

The duration of the fever was from the ninth to the fifteenth day, rarely continuing till the twenty-first, invariably terminating with some critical discharge, as profuse perspiration, diarrhœa, epistaxis, proctorrhagia, and the catamenia in females. The first mentioned being the most frequent.

The disease was brought by emigrants and communicated by contagion. It prevailed indiscriminately among the villagers and respectable farmers in the neighborhood. The locality was comparatively new, and subject to malarial influence.

Treatment—On consulting authors, I found no two agreeing as to the proper treatment, many advocating the most opposite extremes; some recommending antiphlogistics and general bloodletting, while others depended wholly upon stimulants. To the former class, I think, the clebrated Count Cavour fell a victim. In 1848, at Toronto, I saw scores of emigrants, and others, sacrificed to the latter. In this dilemma it occurred to me to follow a sort of intermediate course, and to be guided by the most prominent and urgent symptoms and the attendant complications. I generally commenced by giving an emetic of ant. pot. tart. and ipecac., followed by a cathartic of pulv. jalap., pulv. rhei. and chlo. hyd. During the day the following mixture was given every four hours: Ant. et pot. tart. gr. 1¼, tr. ipecac. gtt. v., tr. camph. com. gtt. x., tr. digita. gtt. v., pot. nitras. gr. ij., aquæ q. s. At night, a powder composed of pulv. ipecac. com. gr. viij. to x., pulv. ant. com. gr. iij., chlo. hyd. gr. ij. The bowels were kept open by magnes. sulph., pot. bitart. and fol. sennæ. Thirst was allayed by cooling and effervescent drinks, such as lemon juice, pot. bicarb. with acidi citric or sodæ carb. with acidi tartarici. Besides cooling applications to the head, the surface of the body was daily sponged with one part whisky and two parts water; in the later stage whisky alone was used, and the feet were often bathed in warm water. When the brain, lungs or liver became affected cups were applied to the back of the neck, and even to the scalp, the chest and right hypochondriac region; later, blistering. A cup or two on each side of the spine, in the lumbar region, also dry cupping the whole length of the spinal column, gave great relief.

During the second week warm baths were found both grateful and beneficial to the patient, if not too weak; and either of the following prescriptions substituted: ℞. Pulv. ipecac. gr. ss., pulv. digita. gr. ij., pot. nitras. gr. ij., ammoni. carb. gr. iv., chlo. hyd. gr. ss; or, ammo. hydrochlo. gr. v., vin. ipecac., spts. etheri. nit. aa. gtt. x., tr. hyosciami gtt. xx., aquæ camph. q. s., to be given every four hours; the bowels kept open by occasional enemeta of ol. ricini and ol. terebinthi. As soon as signs of exhaustion showed themselves, stimulants were given in such quantities as the case seemed to demand. Pale brandy and whisky, either alone or combined with eggs, milk or beef tea, were the most effectual, and produced the best and most favorable results. It was often surprising the amount of liquor the patient could tolerate with impunity. When convalescing, the former treatment was dispensed with, and bark, wine, bitter tonics and nourishing diet prescribed instead. The diet at first was mild; toast, gruel, milk and panada being the principal; afterwards, beef tea, chicken soup, fresh eggs, meat broth, arrowroot, wine, whey, etc.

Free ventilation was strictly enjoined throughout, and burnt tar and chloride of lime used as disinfectants.

It will be seen from the foregoing that the treatment was partly antiphlogistic, alterative and stimulant.

In contrasting the symptoms of the two diseases, we find a manifest difference. In typhus the invasion is well marked and the symptoms more severe. There is more tendency to congestion; rigors more distinct, pulse continues full till towards the last, in fatal cases; tongue furred, but never black; face and eyes turgid, expression wild and excited; petechiæ dark, red and large; bowels constipated, and the duration of the fever shorter. In typhoid, the premonitory symtoms and subsequent complications are not so urgent; chills and fever are milder; pulse more frequent and quick; tongue coated white, becoming black in the later stage; face often pale, with red spots on cheeks; eyes sunk, pupils dilated, countenance anxious; spots rose colored, smaller and fewer; pain and gurgling in the right iliac region, and greater prostration from the commencement.

The physician almost intuitively sees a difference between typhus and typhoid fevers. In the former, we have a disease which seizes with violence, and gives, throughout, unmistakable signs of the nature and extent of its severity; even in its complications there is nothing masked. Its progress is comparatively rapid towards recovery or death. All the vital forces are early aroused to action, and nature puts forth every effort to repel the poison. It may be compared to a bold and impetuous enemy openly attacking a citadel, awakening the garrison to resistance.

The latter invades slowly and surely, and often lulls to false security by its mildness. We can not know how soon fatal symptoms may declare themselves, nor at what period we may pronounce the patient safe. Neither do external phenomena always designate the amount of mischief going on within. The whole course of this disease is marked by that low, insidious character which gives it the name typhoid. Unlike the former, this foe is a great tactician; it mines and countermines, retaining possession for a long time in spite of nature and the *doctor*.

THE OPERATIONS FOR CATARACT EMPLOYED AT THE PRESENT TIME, WITH HISTORIES OF MY FIRST SIX CASES.

By Henry F. Lyster, M. D., Detroit.

Read before the Wayne County Medical Society, March 2, 1870.

Operations for the removal of cataracts and the consequent restoration of transparent media for the admission of light to the fundus oculi have been made from very early times. Hippocrates and the surgeons of his time had the correct view of the nature of the disease, although the exact location of the crystalline lens may not have been correctly known. The erroneous views of Galen in regard to the lens being the immediate organ of sight, withdrew the whole subject from the attention of the profession for centuries. The discovery of Kepler, 1604, that the lens was simply a refracting body, revolutionized the erroneous opinions at that time entertained, and led to new investigations.

About the middle of the seventeenth century Lasuier, Quiné, Rolfinckius, Gassendus, Rauhault, Borelli and others, revived the Hippocratean views so long disregarded; and still later, early in the eighteenth century, M. Brisac, Maitre Jean Petit, Taylor, Heister, St. Yves, Freytagius, and others, rendered the fact generally known that cataract consisted of an opacity of the lens itself. Operations were at this time much more frequently made by persons outside the profession than by educated physicians, and it is quite probable that the operation for conclimy has been made ever since the time of Hippocrates and it may be for centuries previous to that era.

The operation in the chief surgical authorities of the seventeenth and early portion of the eighteenth centuries, is the depression or reclination of the opaque lens, essentially as is now described in present works, and until recently so generally practiced. M. Petit, made, at the suggestion of M. Mery, one of the earliest extractions of cataract for the relief of a matured case. Freytagius (1721) mentions extraction as being allowable, and that his father had been accustomed to perform it frequently with good success. Heister only recommends extraction in cases where the lens has slipped through the pupil and lies in the anterior chamber, and does not hesitate to disparage the operation for extraction as referred to by Freytagius and as strongly commended by the most popular oculist of those times (1721–1740), Taylor, of London. Operations have become constantly modified since those times, as the anatomy and histology of the eye have become more clearly understood and its pathology investigated.

The operations now made are:

1st. Discession, or division, or solution—Employed in the several forms of cataract occurring in childhood, except in the siliculose variety; also employed after operations for extraction to remove opacities of posterior capsule.

2d. Linear Extraction—Employed in fluid or soft cataracts; also where the lens has swollen from injury and presses upon the iris, as sometimes it does after the division of its capsule and after wounds; also used in shrunken cataracts.

3d. Flap Extraction—Employed in cases where the nuclei has a greater density than the surrounding layers.

4th. Gräfe's Modified Linear Extraction—Employed for similar cataracts.

This latter operation, says Stellwag, is of service where the cortical portion is quite adherent, and where the capsule is of normal consistency, when general or local conditions render suppuration of the cornea imminent; or when the condition of the patient renders a less rigid confinement advisable. Several modifications of these methods have been dignified by separate recognition, as Pagenstecker's, Critchett's, and others. The extraction of cataract by the flap section is the most complete and perfect of all surgical operations. It is too perfect in itself, and answers so fully all that is required of it, that it can not be permanently superseded by any other method in suitable cases.

The distinctions will be drawn in time more plainly between the cases to which the modified linear extraction and the flap extraction are respectively adapted. At the present time there is a disposition on the part of many operators to prefer the new operation of Von Gräfe to the corneal flap extraction in cases equally suitable to either. The modification was introduced by Von Büfe, not from a sense of any deficiency in the corneal flap operation in cases for which it was adapted, but to apply to cases where there was constitutional disease, as gout or rheumatism, or when there was chronic cough, any of which complications would render the success of the flap operation doubtful.

The following scale of results has been recommended by Von Gräfe for comparison (*Ann. d'Ocul., 1865*):

1. Complete success, when patients are capable of reading the smallest print with appropriate glasses.
2. Moderate success, when the patients can read large characters, and make their way about with facility.
3. Imperfect success, when the patient can count the fingers at the distance of at least a foot.
4. Failure, when only quantitative perception of light, or total blindness results.

The treatment of cataract by depression or couching has been so unsuccessful that it has been quite thrown out by oculists, and now is employed only by pretenders. Von Gräfe's researches show that not more than 60 per cent retain good vision for any length of time. The failures are chiefly from early suppurative and adhesive inflammation of the internal membranes, from infiltrations of the vitreous, and glaucomatous inflammations with excavation and atrophy of optic nerve. (*Clinique Ophthalmol, 1866*).

M. Meyer reports that after flap extractions, 10 per cent are lost and 10 per cent are only improved, leaving 80 per cent for final success, more or less great, with or without a secondary operation for removal of opaque capsule, or an iridectomy having been performed.

Von Gräfe estimates that by corneal flap operations 65 per cent enjoy good vision, and are able, with the aid of glasses, to read ordinary or rather large type; 25 per cent an improved vision, being inadequate to the perception of small objects, and in 10 per cent no vision, or at least no useful vision is retained. (*Vide Op. H. Power, London, 1867.*)

Among 1600 operated upon by Von Gräfe during eleven years, by flap extraction, his per cent of successful results averaged 80 by one operation. Imperfect results in 13 per cent (10 of these liable to be improved by a secondary operation), and 7 per cent of failures. After introduction of compress, 84 per cent successful results; 11 per cent incomplete, and 5 per cent failures. In private practice, 91 per cent successful; 6 imperfect, and 3 per cent failures, during last six years (250 eyes). Patients were in better condition than those in hospital, and had better air and hygienic influences.

Professor Jacobson (1863), according to Soelberg Wells, reported a much larger per cent of successful results with flap extraction combined with an iridectomy.

Dr. Williams, of Boston, has recently given the statistics of 44 cases by corneal flap, using his flap suture; 32 succeeded in reading ordinary type, 4 were followed by capsular cataract, 4 could walk alone, etc.; in 4 the operation failed.

Von Gräfe has had great success with his modified linear extraction.

Mr. Windsor (Syd. Soc., 1865–6) records about 300 operations by this method, 90 per cent being quite successful, sight being from $\frac{1}{6}$ to $\frac{5}{6}$.

Dr. Williams, of Cincinnati, reports (*vide* Proceedings of the Amer. Ophthalmolog. Soc., 1869) 45 cases operated upon by the modified linear extraction, or Von Gräfe's operation, of which "40 gave good results."

Dr. Noyes, of New York, reports (*op. cit.*) 21 cases after

Gräfe. The number of satisfactory results, without secondary operation, 7. 18 cases were claimed as successes. (*N. Y. Med. Record.*)

Cases 1 and 2.—A. B., male, seven years old, Jackson Co. Congenital complete in each eye. Anæsthetic composed of alcohol one part, chloroform two parts, sulph. ether three parts; M. for inhalation. Needle operation, November, 1868, upon the right eye, using Bowman's stop needles, and attempting to lacerate the capsule of the lens and allow the aqueous humor access to the lens in order to produce solution. The capsule was not effectually divided, and the result was negative.

The father was urgent that delay should not occur, as he was from a distance, and in consequence an incision was made in the superior arch of the cornea with a Beers cataract knife, and the capsule of the lens was ruptured with a Gräfe's cystitome, the lens matter, which was soft, escaping readily without delay. Atropine solution, of the strength of one grain to the ounce, was used previous to the operation to dilate the pupil, not only to prevent the pupillary margin from becoming injured by the instruments, but in consequence of its known properties becoming again effective upon the reaccumulation of the aqueous. Notwithstanding all precautionary measures the iris became involved in the cicatrix, and the pupil was drawn from the true axis of the eye, and eventually became almost obliterated by the results of the inflammatory process.

He was enabled to obtain some service from that operation, and it is hoped that the operation for iridectomy, to which he is to be subjected, and for which an appointment has been made for May, 1870, at St. Luke's Hospital, Detroit, will result in giving a central opening sufficient to allow him to have good use of the eye.

Under date of December 2, 1868, the father writes: "My little boy is doing well; his eye looks nice and clear; he can see out of it, but as a precaution we keep it bandaged, etc." December 28, 1868: "My boy is beginning to distinguish pictures in a book, and colors—red, white and black—and to tell what they are; the eye looks nice and smooth, etc." This little patient had to learn color and distance after the acquisition of sight, as he had been born blind.

The operation upon the left eye was made January, 1869, and was similar to the first. It was accompanied by no particular symptoms or complications, and healed readily, although he was taken away thirty miles by the cars immediately after the operation. Atropine was used and the pupil maintained dilated. January 27, 1870, the father wrote that the boy could see pretty well out of the eye operated upon the last time; that they both looked bright and well, but that he would like the iridectomy operation made upon the right eye.

CASE 8.—Mrs. B., aged forty years, housekeeper, married; Calhoun Co. Cataract had been noticed for a number of years in the left eye, but recently the right eye had failed so rapidly that within a few months she had become helpless among those who were accustomed to look to her for their support. Upon examination, the right lens was found to be somewhat less opaque than the left; on this account, and from the fact that the history of the case showed that cataract first occurred in the left eye, that eye was selected for the operation.

On January 20, 1869, the patient was put under chloroform, and incision for superior flap extraction was made with Beers' knife, the capsule lacerated with Gräfe's cystitome, and the lens easily escaped through the opening in the cornea, being gently assisted by pressure with the curette and by the cataract hook. A very small amount of vitreous humor was observed following the lens, when the eyelids were immediately closed, and a slight pressure made by bandage and compress. There was no cortical substance observed in the anterior chamber or between the lips of the wound, and the pupil was observed by myself as well as by my assistant, to be clear, and in the central axis of vision. No instrument was introduced after the laceration of the capsule. A solution of atropine was employed for a few days, and the dressings were changed thrice daily. After a few days, a large shade was permitted in place of the bandages, and more light was allowed early in the morning and toward evening, artificial light being carefully excluded. The perception of light was found in a couple of weeks to be excellent, and the amount of vision was found to be satisfactory. She was enabled to distinguish objects at a distance. Her physician wrote to me, under date of 17th February, 1870, that "she can, with the aid of glasses, read the finest print," and that her general health is better than for several years. February 28: Focus of glasses, 2½ and 3½; can use glasses for long or short sight equally well; I have no test types, but she can see to read the finest print or thread a very fine needle.

Case 4.—Mrs. G., housekeeper, aged 53, widow; Kalamazoo Co. Had suffered from cataract of both eyes for several years. The left eye representing the oldest history, was selected for the operation. The general appearance of the eye was excellent, and the pupil responded readily to light and also to the influence of the atropine solution.

The operation was made in March, 1869. The patient was placed under the influence of chloroform, and the operation for extraction made by the superior corneal flap. There were no accidents. The patient began vomiting soon after the operation, and was, to a great degree, troubled by this inauspicious condition for several days. This may have arisen from the chloroform, and was subsequently continued from the inflammation which set in within forty-eight hours. An abscess formed as a result of the inflammation of the iris, and was opened and its contents evacuated. The cornea maintained its integrity, and there was no anterior synechia, but sight was lost from occlusion of the pupil by inflammatory deposits. Whether a secondary operation will restore vision is yet to be determined.

Case 5.—E. L., white, male, aged 67 years, farmer; Oakland Co. Two years since noticed dimness of sight and cloudiness. One year afterwards found accidentally that vision was lost in the left eye. The cataract in the left eye became fully ripe in a few months. A medical gentleman practicing in the city sent him to me for an operation, July, 1869, and effectually assisted me.

The superior flap extraction was made without anæsthetics and without complications arising to embarass the operation. There was quite an amount of the soft corticle portion of the lens left behind. Gräfe's curette was introduced two or three times and a portion removed, and the absorption of the remainder was trusted to the reaccumulating aqueous humor. The usual bandage was then applied. No trouble was experienced, and the condition of the patient, and the appearance of the discharges and of the lids being favorable, the eye was not opened until the fifth day. Upon the seventh day there was an attack of vomiting, which indicated to me marked sympathetic irritation, and upon exposing the incision it was discovered that the iris had prolapsed and that the edges of the flap had gaped, with a protruding portion of the iris uniting them and restraining the aqueous. There was no anterior synechia, and the anterior chamber was normal as regards its depth. The striæ of the iris were quite distinct, and only toward the prolapsed portion could any cloudiness of its fibres, indicative of fibrinous exudation, be observed. The edges of the corneal incision had maintained their integrity and there was apparently no tendency to suppuration. A medical gentleman of extensive experience in ophthalmology was called in consultation.

At this time the ultimate result was regarded as most unfortunate to the integrity of the function of the eye. At the suggestion of counsel, the protruding iris was cut away with a pair of curved scissors, and pressure was applied by means of a compress and bandage. The patient was almost immediately transferred to a cool residence near the river, a couple of miles below the centre of the city, and immediately began to improve. The exhibition of potassii iodidi in comp. tinct. of cinchona increased his strength and assisted in the absorption of the corticle portions of the cataract which obscured the pupil.

Three months after the operation he could, with the aid of cataract glasses for long vision, see to read the signs upon an avenue 150 feet wide. February 3, 1870, eight months after the operation, I find the eye normal, with a good sized, but somewhat triangularly shaped pupil, caused by the adhesion of the iris to the wound. The vision is good; he can easily read with his short focus glasses. Upon being tested, he found no difficulty in reading Jaeger's No. 1 test type at twelve inches. The cataract in the right eye is now thoroughly ripe, and the patient has been advised to submit to its removal to maintain in its full efficiency the integrity of the retina.

CASE 6.—D. J. M., white, male, aged 52, carpenter; Genesee Co. When 43 years of age, nine years ago, he was sick with a bilious fever for several weeks. When convalescent, and while quite weak, he resumed his occupation. In a few days he noticed, while working out in the sun, "it seemed as though there was a fine web floating before his eyes." It kept gradually increasing until, at the expiration of five years, he was obliged to give up working at fine work, and in the sixth year he had entirely lost vision in the right eye. "For the past two years he had not been able to see further than two rods with the left eye, and could not go into a strange place without being led, and could not see the food upon his plate."

December 3, 1869, I made the superior flap extraction on right eye, at St. Luke's Hospital, Detroit, several medical gentlemen being present. No anæsthetic was used. The several steps of the operation were proceeded with without accident or complication of any kind. There was but little cortical substance, the nucleus being large. The axis of vision was rendered clear. An iridectomy was made during the operation and previous to the extraction of the opaque lens.

The result of the operation is perfect; the pupil is large and central. His wife, writing in regard to his glasses, under date of February 10, 1869, says: "While you were working over him he could see your hand and the instrument; at the end of three weeks he could distinguish colors, and now, ten weeks after the operation, he can see the signs across the street, and can read them about ten rods off. He can read the headings of newspaper advertisements, and can look off half a mile and see trees and other objects. His sight is getting stronger and stronger each week, etc." This was without his cataract glasses.

To-day, thirteen weeks after the operation, he came down to the city for his glasses. The pupil appears central and of good size. With glasses 2½ inch focus, for short range, he can, at 14 inches, read No. 7 Jaeger, and at 12 inches read No. 1 Jaeger.

With 3¾ inch focus, for long range, he can easily read the small signs 50 yards, and read a sign composed of letters 14 inches long, 275 yards, and could also at that distance see the sash between the panes of a window frame for 8x10 glass.

ASTHENOPIA—SOME OF ITS CAUSES AND METHODS OF DETECTION AND TREATMENT.

By J. F. Noyes, M. D., Ophthalmic Surgeon to St. Mary's Hospital.

In few affections of the eyes not especially inflammatory in character is the specialist more frequently consulted than in that condition of impaired vision produced by over taxation, to which the term asthenopia has been applied. It is found among all classes, and particularly those who are obliged to use their eyes constantly upon near and small objects. I have more frequently met with the affection among sewing women, who ply the needle day and night for a livelihood. I have been not unfrequently consulted also by students and scholars at school on account of this trouble.

Generally the eyes in such a case preserve their natural healthy appearance, and the vision is perfect both for near and distant objects, especially for the latter; but the patient complains that he is unable to work or read for more than a few minutes at a time, and this more particularly when the light is indifferent, without experiencing a sensation of fatigue with fullness and pain over the brow, and sometimes in the eyes themselves. He is obliged frequently to rest for a few moments and close and rub the eyelids. The relief which follows from this is, however, of short duration, for if he resumes work the sensation of distress quickly returns, and lachrymation and congestion of the conjunctiva finally succeed. Printed letters now begin to appear confused and run into one another, and the forms of external objects become blurred and misty, and if the work is continued strabismus finally sometimes occurs with double vision. In high degrees of asthenopia these attacks of dimness appear frequently, and come on quickly with the slightest use of the eyes. In milder cases they only appear during work by artificial light or after prolonged work ; they appear also sooner during ill health. The disease may continue sometimes for years in the milder form without interfering with the acuteness of vision, the patient all the while complaining only of an inability to use the eyes.

We are indebted chiefly to the researches of Donders and V. Gräfe for the discovery of the cause of this affection and an elucidation of the nature of the disease, as also for pointing out the proper treatment. They have shown that the symptoms of asthenopia depend upon a fatigue or want of power in two groups of muscles, viz.: The ciliary muscle and the external muscles of the eye-ball, associated with hypermetropia and myopia and sometimes astigmatism. To be able to read or to do any near work with ease and for a prolonged period, a contraction of these muscles is necessary and must be kept up efficiently for the time of work. The power of contraction in these muscles may be weakened or destroyed by paralysis, or become inefficient from paresis or weakness. The power of the muscles for contraction may be also normal, but being obliged to work under abnormal circumstances or conditions as in the case of hypermetropia and myopia, become exhausted too soon ; while in the normal eye they would be at rest, or at least less contracted. The fatigue of the ciliary muscle is probably also accelerated by the tendency there is in the crystalline lens to return by force of its own elasticity to its natural shape and curvature which it has when at rest.

When the asthenopia is dependent upon an abnormal form of the globe, as in hypermetropia and myopia, it is frequently hereditary, and is observed to be transmitted from parent to child. The disease, or feebleness of vision, dependent upon or associated with hypermetropia, occasioned essentially by the modification of the refractive powers of the eye, leads, as we have seen, to atony or deficiency of energy in the ciliary muscle, and when it is associated with myopia, it is produced or proceeds from over-fatigue and insufficient power of the internal recti muscles. In the former case it has been designated accommodative asthenopia ; in the latter it is termed muscular or motor asthenopia.

When the internal recti preserve their natural powers, as generally is the case in the accommodative asthenopia, if any small object, as a pencil held vertically in the middle line, be slowly approximated to the eye, the gradual convergence of the optic axes can be properly performed and maintained without fatigue or any tendency to the production of strabismus, whereas the insufficiency of the internal recti in muscular asthenopia, associated myopia, consequent on over-exertion, can be readily made apparent by the above experiment. As the pencil is gradually brought closer to the face, one or the other eye begins to deviate or lag behind, and finally stops in its convergent movement and begins to move outwards in consequence of the action of the external rectus, which now preponderates over that of the internal.

Other methods have been made use of to render evident the insufficient power of the muscle. The placing of a prismatic glass before the eye, with its base or angle directly upwards or downwards, is one of these methods. "This, of course, would occasion two images of any small object, which, in the normal eye, would be placed one above the other; in the asthenopic condition of the eyes under consideration, the muscles being liberated or set free, as it were, to take up their own position, and being no longer influenced, as they were previous to the application of the prism, by the strong natural disposition that always exists of avoiding double vision by fusing closely approximating images, contracts only to such a degree as can be accomplished without unnatural effort. The weaker one of the two internal recti consequently contracts less than the stronger, and the appearance of crossed diplopia immediately results. The images perceived by the eye whose internal rectus is most feeble being above and on the opposite or outer side of that perceived by the stronger eye. The degree of the insufficiency can be expressed by the prism, which, placed with its angle *outward* before the second eye, corrects the divergence, *i. e.*, brings the two dots or objects into the same vertical plane."

Bader makes mention of another form of this disease, which he denominates "Apparent, not true Asthenopia." The patient complains, when reading or when looking at distant objects, of the eyes aching or watering, of pain in the ciliary region, and sometimes in the back of the eyes. The pain is sometimes permanent, and increases when attempting to use the eyes. As in the other cases, this is accompanied by a sensation of tension over the eyebrows, smarting of the eylids; but there is, moreover, photophobia and occasionally phosphenes. These symptoms sometimes increase so much that going about in bright light becomes impossible. Apparent asthenopia, he says, occurs often in myopia, and occasionally in hyperæmia of the optic disc and retina, and is termed hyperæsthesia of the retina, if no organic changes are discoverable.

Asthenopia, in any of its forms, is a symptom which, as a rule, generally subsides under proper treatment of its cause. Persons suffering from the accommodative form may generally be benefited and cured by wearing spectacles with convex lenses, particularly when engaged upon fine work or in reading, so that the patient can hold the object at a distance of 12 to 14 inches, and thus require a much less degree of convergence. If, however, the glasses are found upon trial too strong and trying to the eyes, they must be exchanged for weaker ones, and the strength be gradually increased until the asthenopia disappear. "In using the spectacles for reading, sewing, etc., it is always advisable to rest for a few moments at the end of half an hour or an hour. The eye will then be able to resume the employment with renewed vigor and ease." Should the asthenopia not be benefited or cured under the use of glasses, we must examine the power of convergence. Insufficiency of the internal recti is most frequently met with in cases of considerable myopia. This arises from the fact that a person with a myopia of $\frac{1}{5}$ would have to hold a book, to read, at a distance of about five inches. This requires considerable convergence of the visual lines and great exertion of the internal recti muscles. The muscles after a time become fatigued, symptoms of asthenopia arise, and if the work be persisted in, one eye will deviate outwards. The insufficiency may also be found to coexist with hypermetropia. Its presence should be suspected if the symptoms of asthenopia continue in spite of the use of convex lenses. The use of prisms with their base turned inward may be used with the hope of relieving the internal recti. This, however, is only indicated in the slighter cases of insufficiency or when there is only a very limited power of abduction for distance, so that there might be a risk of producing convergent squint by a tenotomy of the external rectus. The prisms may often be made more effective by being combined with concave glasses.

The best mode of treatment, says Mr. Wells, when it becomes necessary, is that first recommended by Von Gräfe, viz., division of the external rectus. By so doing we indirectly strengthen the internal rectus, which will now have a less resistance to overcome. If a slight convergence should show itself, produced by the tenotomy, it is of little consequence, as this may be readily neutralized by an effort of the external rectus. "The amount of convergence which may be allowed for distance, must depend entirely upon the relative strength of the internal and external recti. Their power should, therefore, be carefully tested with prisms before any operation is undertaken. If the myopia in the case be ¼ and the internal could, before the operation, only overcome a prism of 4° or 5°, but the external rectus one of 14° or 16°, it would be perfectly safe to permit a convergence of ½ a line or 1 line for distance, more particularly if the excluded eye had before the operation deviated outwards ¾ of a line or 1 line when covered. The external in such a case would remain sufficient to rectify the convergent squints."

The following considerations, continues Mr. Wells, must guide us as to the extent of the tenotomy:

1st. The degree of the myopia and the consequent distance for which the optic axes must converge in reading, etc.

2d. The strength of the prism which can be overcome by the internal and external recti.

3d. The degree of deviation outward (in looking at distants), which occurs when the affected eye is covered.

The less this divergence is, the more careful must we be with the tenotomy. If the degree of the insufficiency exceeds the prism which the eye can overcome at a distance by abduction we must only partially correct the insufficiency, and limit the effects of the operation by a conjunctival suture. The effect of the operation may be increased, also, by using prismatic glasses with the base inwards for reading, etc., as before stated. "When the the power of abduction is extremely slight, and the insufficiency at a distance almost nil, tenotomy is contraindicated." In such cases the asthenopia must be alleviated by prismatic glasses.

4. The mode of deviation when the object is approximated to the eye—if the eye moves, for instance, suddenly and spasmodically outwards at the moment when the insufficiency of the internal recti shows itself, Gräfe thinks that a considerable correction is indicated."

When both recti are observed to be weaker than normal, a double tenotomy will be necessary. It is not regarded advisable to do this, however, at one sitting, but we should divide the external rectus of the eye most affected and then, subsequently, the other if it becomes necessary.

The surgical treatment sometimes required, I need hardly add, should not be undertaken without a thorough knowledge of the case in all its bearings. This could be had only from one who had given the subject special attention. As many cases, however, occur which require only the use of suitable glasses, it has been my purpose in the present article only to present such an outline or description of the trouble as might enable the general practitioner to recognize the affection and recommend timely treatment in the selection and use of glasses for such cases.

Selections.

ON THE THEORY OF COUNTER-IRRITATION.

By Dr. Anstie.

[Concluded from page 231.]

The other principal theory on which the routine use of counter-irritation has been defended is that of "superseding one morbid action by another," which Dr. Dickinson believes to be "at the bottom" of the practice. I believe that to the largest extent this has been, and still is, the case; and I regret the fact, for it is not creditable to the philosophic education of the profession. The theory really is a "relic of notions belonging to times which were antecedent to the birth of scientific physiology;" and (*pace* Dr. Bennett) I must repeat my conviction that it is still the "leading idea of counter-irritation" for very many practitioners. It is of little use to contend that the mass of practical physicians and surgeons are quite guiltless of any predilections for mystical or metaphysical methods of reasoning about medicine; the fact is, that they inherit from their predecessors a traditional language and traditional forms of thought which unconsciously fetter them to a far greater degree than they are aware of. Nay, more, I cannot help remarking that even Dr. Bennett, though he takes, on the whole, what seems to me the far more scientific standpoint of the *depletion* theory, has still a lingering tendency towards the *substitution* theory. He quotes the *metastases* of disease, in illustration of the possibility that counter-irritation may produce effects at long distances; and he makes the same strange application of Hippocrates' maxim (that when two pains occur at once, in different parts of the body, the greater will annihilate the other), which was a fruitful source of confusion in the speculations of mediæval physicians. Dr. Dauvergne (with much of whose paper I am obliged to disagree) has well exposed the fallacy of applying the above maxim to the case of inflammations. "Pains," he says, "are not inflammations, nor even congestions, and to obscure or mask a thing is not to divert or destroy it. Yes, the old man of Cos was right when he said that a stronger pain can mask a weaker, but he was talking of a phenomenon of sensation." To me it seems clear that no inference can logically be drawn from the one case to the other, except on the basis of exploded vitalistic theories, which regarded disease as a distinct and hostile entity, whose assaults upon the organism were resented by the voluntary action of a vital spirit. And surely, the whole idea of "metastasis" is nothing more than a relic of the same school of thought. Even in the case of the so-called migrations of gout, there is nothing which truly deserves the name of metastasis, for the gouty taint equally pervades the whole organism, even at the moment when its inflammatory manifestations cease at one spot and commence at another. But to apply the general principle of substitution to the artificial treatment of the numerous inflammations which depend upon fixed morbid deposits or mechanical mischief, as is constantly done, *e.g.*, in the case of pneumonia depending on heart disease, or meningitis depending on tubercle, seems to me, as it does to Dr. Dickinson, entirely unreasonable; nor do I believe that it would ever be done by one who had fairly shaken himself free of the ontological view of disease, which is still copiously represented in our medical language by such luckless phrases as "elimination," and the like.

But it is time to turn to the consideration of Dr. Ross's theory, which differs essentially in character from both of those which have been noticed. In the first place, Dr. Ross is neither consciously nor unconsciously a vitalist. He does not regard disease as an entity, to be hustled or coaxed out of the body by force or pious fraud, and he therefore naturally rejects the substitution theory. Next, he refuses to admit the depletion theory, on the double ground that the machinery of relief which it assumes is neither demonstrable nor apparently possible, and that mere depletion would not account for the clinical facts. He draws out a series of "empirical laws" which are a rough, but, as he thinks, sufficient representation of the main clinical facts; and these laws sufficiently agree with the proposition which he puts forward as a "main intermediate proposition between the theory and the practice of counter-irritation," viz., that irritation of one part of the body tends to stimulate the textures in its vicinity. Finally, he propounds the theory that counter-irritants exert an influence, always *stimulative* and not *depressing* in *tendency*, and that this influence is exerted, for the most part, not through blood-vessels, nerves, or any special structures, but through *continuous, and also through contiguous, parenchyma.* I shall not at present revert to the discussion of Dr. Ross's empirical laws, because that subject belongs to the domain of clinical observation, and I must confine my present remarks to matters of physiological theory, reserving to a future occasion the criticism of the clinical evidence which has been adduced.

I am anxious, at present, to conclude the history of the theoretical part of the recent discussion by explaining the hypothesis put forward by myself, which is as follows: 1. It can hardly be doubted that if so-called counter-irritants are to do any good in the *early pyrexial* stages of inflammations, they must do so by the exercise of an influence which contracts the arterioles, thus heightening the arterial blood-pressure and relieving the stress on the capillaries. 2. But all experimental evidence goes to show that *strong* irritation (strong, *i. e.*, either from the virulence of the agent, or the directness with which it is applied to the suffering part) tends to produce, not contraction—or this only momentarily—but paralytic dilatation of the arterioles, and passive overfilling of the capillary web. 3. Hence it would appear that if the more powerful stimulants ever do good in the acute stages of inflammation, it can only be when they are applied at such a distance that their influence falls very gently, and much diluted, on the part aimed at. 4. It would seem probable that the effects of milder skin-*stimulants* would be equalized with those of *irritants*, on the condition that they were applied nearer to the engorged organ, or to a larger surface of the skin; in either case the *quantity* of the influence would make up for the lack of *intensity*. As far, then, as regards the possible benefits of skin-excitation on the *early stage of acute* inflammations of distant organs and tissues, my theory considers that all these efforts are produced by a *stimulative* action on the *vessels* of the diseased part.

5. The case of *chronic* inflammations, with no or with little pyrexia, was not sufficiently dealt with in my former paper, owing to limited space. Dr. Ross has truly remarked that the tendency of modern practice is, on the whole, towards restricting the use of counter-irritation to the treatment of the chronic forms and stages of inflammation. He points out that in the pathological stage which succeeds to that of acute pyrexia and constantly increasing engorgement, the inflamed part is the scene of abundant vital movement (cell-growth, proliferation, etc.), which, however, is of a low type. It is upon this, he thinks, that the stimulating influence of counter-irritation acts with good effect; it substitutes for this profuse but debased activity a more restrained but higher type of formative action. I now beg to say that so far as counter-irritants can do good in this stage of inflammatory diseases, my theory is identical with that of Dr. Ross as to the effect produced, the only question left open is that of the channel of the influence. On that point, as will be seen directly, I do not agree with him.

6. The case of *neuralgic* affections appears to me to throw direct light on the *modus operandi* of counter-irritants in inflammatory diseases. The remarkable utility of blisters in neuralgia is a long established fact; but my own observations lead me to think that these remedies as frequently do harm as good, from a wrong mode of application. I have repeatedly found that blisters applied directly to the site of the pain if anything *aggravate* the suffering; but, on the other hand, if they are applied to a posterior branch on the spinal nerve-trunk from which the painful nerve issues, a reflex effect is often produced of the most beneficial character. For example, a blister applied over the *posterior* branches of the intercostal nerves is a powerful remedy for pain situated in the course of anterior branches towards the front of the chest. Were *pain* the only symptom relieved in this manner, however, the argument would be incomplete. But it happens, in some cases of inveterate neuralgia, that inflammatory affections are secondarily produced around the points of greatest pain; and these secondarily inflammations are remarkably benefited by the application of blisters in such a situation that they can only act in the reflex manner above indicated. Here, then, is a case in which one can identify the path of the noxious influence, and also the path of the therapeutic influence which successfully opposes it. It appears that the functional condition of the sensory nerve-centre, which corresponds to pain at the periphery of the sensory nerve, can extend its influence to the associated vaso-motor nerve-centres,

and finally issue in paralysis of vaso-motor fibres going to the vessels of the painful part. Hence local congestion, hypersecretion, or altered secretion of glands in that neighborhood, etc. This state of things, it seems, can be remedied by a stimulant influence falling on the sensory nerve-centre through the channel of centripetal fibres, which have no connection with the inflamed part except through the centre, but yet a very clear and definite connexion with it *by that route.* I cannot but think that we have here most pregnant suggestions towards a reasonable theory of counter-irritation as a remedial agent in inflammatory affections. I have never denied for an instant that the transmission of an influence from the skin to distant organs is possible; but I insist upon two things. First, that unless we can proportion the force of the skin irritation to the vital status of the part to be acted on, we are as likely as not to produce an effect exactly opposite to what we intended; and secondly, that we ought to have some guarantee for the influence being limited in incidence to the affected part at which we aim it. And it seems probable that by reflex stimulation applied to a physiologically distant tract of skin, which is nevertheless in direct communication with the centre on which depend the vaso-motor and also (if, as seems probable, they have an independent existence) the *trophic* nerves of the affected organ, we at once secure the necessary *dilution* of the influence, and an intelligible *path for its transmission* to the diseased part, and to that alone.

7. Dr. Ross limits the beneficial action to the secondary stages of the disease; but it appears to me that whatever good may be produced at this stage through the reinforcement, or (as he would call it) alteration in type, of the tissue-force, may be equally expected in a state of mere inflammatory engorgement by appropriate stimulation of the vaso-motor system of the affected part. And as regards the channel by which the influence is to be conveyed, I have to object to Dr. Ross's theory of the transmission, through continuous and also through contiguous parenchyma, of the stimulant action, that although it is not impossible that a stimulant influence may be thus transmitted independently of the nervous system, it is most improbable that upon the common plan of merely applying irritation to a large surface of skin that happens to be *opposite* the inflamed organ, any precision of effects can be attained. If, for instance, we attack with our blister some five or six inches square of the skin covering the chest of a pneumonic patient, it is impossible for us to be sure that in attempting to produce a beneficial stimulant action on the lung beneath we shall not gratuitously involve six inches square of previously healthy costal pleura in an *inflammation,* which may be by no means trivial in its effect upon the final issue of the case. And it seems to me that this is a serious objection to the theory of Dr. Ross so far as it applies to the use of blisters or other strong irri-

tants to the skin of the chest or the belly with a view of influencing inflammatory processes in the lung or bowel. In short, if the influence of blisters *does* "traverse the body in straight lines, like bayonet thrusts," to use Dr. Dickinson's somewhat derisive phrase, it would seem to be an uncommonly dangerous and unmanageable influence; and it is difficult to see how it could be employed with advantage in practice. Whereas, if it travels only by the paths of reflex nervous action, there is no reason to think that (unless applied on an enormous scale) it would exert any vitally depressing effect on organs so anatomically remote, and the only question would be whether it was not purely indifferent; a view to which I on the whole incline in the case of organs so situated as the lung and the bowel are.

I cannot conclude this already too lengthened estimate of the present position of the theory of so-called counter-irritation without suggesting the alterations in nomenclature which seem to me to be necessitated by our improved physiological and pathological knowledge. I am decidedly of opinion that the word counter-irritation should be altogether banished from our phraseology. "Distant stimulation," or some equivalent phrase, would properly express the effects of blisters, stupes, mustard plasters, and moist heat. The actual cautery probably acts simply by *destroying* a certain quantity of sensitive tissue, and has consequently no real relationship to agents of this class. The only case in which we should retain the phrase irritant, is that in which we deliberately excite or increase inflammation, sacrificing the welfare of a comparatively unimportant tissue or organ to higher vital interests; as, *e.g.*, when we inject an irritant fluid into a serous sac, in order to promote adhesion of its walls.—*The Practitioner*.

SPINAL IRRITATION.

By William A. Hammond, M. D., Professor of Diseases of the Mind and Nervous System.

HISTORY.

It has been questioned by several distinguished authors whether such an affection as spinal irritation really exists as a distinct disease. Thus Valleix ascribes the most important of its manifestations to hysteria, and regards the spinal tenderness present as being due to simple intercostal neuralgia; Inman considers the pain produced by pressure over the spinous processes of the vertebræ as existing in the muscular attachments, and as indicative of what he calls myalgia. Mr. Skey evidently looks upon all cases of spinal irritation as hysterical in their character, and Niemeyer speaks incredulouly on the subject, without giving any very decided opinion. It would be easy to bring forward other authorities who have expressed similar views, and I may have to allude to some of them more fully hereafter.

My own opinion is, that there is a well-defined disease of the spinal cord, which, if designated by its pathology, may properly be called spinal irritation, but which, in a system of nomenclature based upon morbid anatomy, would preferably be named spinal anæmia. In the recently published nomenclature of the Royal College of Physicians, the affection has no place, unless it be included under the head of hysteria.

The first author who distinctly grouped together the symptoms of spinal irritation was J. Frank, who, under the name of rachialgia, described the disorder with considerable accuracy, and laid the principal stress upon the local pain. He was followed by Stiebel, who, however, contributed little to our knowledge upon the subject.

Mr. J. R. Player was among the first English physicians, if not the very first, to call attention to the fact that eccentric derangement of function may be the result of irritation of the spinal cord. Thus he says: "Most medical practitioners who have attended to the subject of spinal disease must have observed that its symptoms frequently resemble various and dissimilar maladies, and that commonly the function of every organ is impaired whose nerves originate near the seat of disorder. The occurrence of pain in *distant parts* forcibly attracted my attention, and induced frequent examination of the spinal column; and, after some years' attention, I considered myself enabled to state that, in a great number of diseases, morbid symptoms may be discovered about the origins of the nerves which proceed to the affected parts, or of those spinal branches which unite them; and that if the spine be examined, more or less pain will commonly be felt by the patient on the application of pressure about or between those vertebræ from which such nerves emerge."

The term "spinal irritation" appears to have been first used by Dr. C. Brown, of Glasgow, who, in a very excellent paper, gives a picture of the disorder which cannot fail to be recognized as truthful and exact by those who have witnessed several cases of the affection. He insists upon not confounding the complaint with those organic diseases of the vertebræ and spinal cord which some of its symptoms cause it to resemble, points out the variation of the phenomena according to the seat of the spinal tenderness, and inculcates the employment of rest and counter-irritation as the most effectual remedies. His ideas of the pathology of the disease are: "That the immediate cause of the pain of the back and breast is spasm of one or other of the muscles arranged along the spine altering the position of the vertebræ, or otherwise compressing them as they issue from the spinal marrow.

"That this spasm in many instances is strictly a *local* disease, produced by fatigue, wrong posture, or other causes, and quite unconnected with the state of the brain, spinal marrow, or nervous system in general.

"But that, in other formidable instances, this partial, spasmodic, or wrong action of the muscles is owing to a faulty state, perhaps an enlargement, of the vessels of the brain or spinal marrow. This state of the brain, as in many other diseases, gives rise to spasm or even to convulsion of certain muscles; which partial symptom from its severity attracts the chief attention. This local affection is confined to those portions of the spine where there is the greatest motion, and where, of course, the muscles having the greatest activity are most liable to deranged action or spasm. I imagine that this view of the subject is illustrated and perhaps confirmed by various symptoms which were observed in the different cases, and which without it were very incomprehensible. The partial palsy, the affection of the sight, the giddiness of the head (for I find that this was a prominent symptom in several cases, especially in that of A. S.), all give some confirmation to the notion that the brain is affected in these severe cases."

Dr. Darwall, of Birmingham, describes several features of the affection with accuracy, such as those simulating cardiac and gastric diseases. He is inclined to believe that the morbid condition of the spinal cord depends mainly upon irregularity of the circulation, generally congestion.

But no essay upon the subject of spinal irritation, which had yet appeared, was equal in thoroughness to that of Mr. Teale, and it is to him that the views now generally held relative to the connection between various eccentric phenomena, such as pain, spasm, and visceral disturbance, and a peculiar condition of the spinal cord, are to be attributed. He, however, committed the great error of regarding the affection as being due to inflammation, and in what, for those days, was logical accordance with this theory, he combatted it with strong antiphlogistic measures. His book may be studied with advantage, as presenting an admirable account of the many diverse phases which spinal irritation may assume.

Mr. Tate, in his work on hysteria, attributes many of the protean manifestations of this disorder to spinal irritation, limited, however, to the dorsal region. He fails to recognize it as an independent disease. His treatment consists in the application of tartar-emetic ointment along the whole length of the dorsal vertebræ, and strong purgation. He discountenances the use of leeches and blisters.

Mr. W. R. Whatton insists chiefly upon the liability to mistake spinal irritation for disease of the vertebræ. He gives a very excellent account of the symptoms. The treatment he recommends consists in the abstraction of blood, by leeches or cups, from the parts where the tenderness is felt, repeated every three or four days, and the application of small blisters on each side of the painful spots. Any debility ensuing in consequence of this treatment is to be remedied by the preparations of iron and quinine.

In a clinical lecture delivered in Dublin, Dr. Corrigan relates the particulars of several cases of spinal irritation, successfully treated by local antiphlogistic measures, and the internal use of iron. He does not, however, add anything of importance to our previous knowledge of the subject.

Dr. Isaac Parish, of Philadelphia, appears to have been the first American author who called attention to the affection in question. He relates the details of several cases, recommends the use of counter-irritants, especially tartar-emetic ointment, and concludes:

"First, that tenderness on pressure in some portion of the spinal cord is an attendant on many chronic neuralgic affections, and that, by relieving it in the manner proposed, these complaints are either entirely eradicated or temporarily suspended.

"And secondly, that the precise indications which this circumstance affords are not sufficiently understood at the present time to justify the establishment of any definite pathological principles applicable to the whole class of neuroses."

Dr. W. Griffin and his brother, Mr. D. Griffin, of Limerick, were the next to write upon the subject. The joint work of these gentlemen is based upon one hundred and forty-eight cases, all of which are thoroughly analyzed, and from which very definite deductions of pathology and treatment are drawn. The essay is not excelled in importance by any previous contribution, and constitutes a really valuable study. The conclusions which they draw are so instructive that I do not hesitate (though by no means endorsing them all) to transfer them without abbreviation:

"1. That tenderness at one or more points of the spine is an attendant on almost all hysterical complaints, on numerous cases of functional disorder when the hysteric disposition is not so obvious, and in many nervous or neuralgic affections.

"2. That many of the symptoms of these affections evidently depend upon a peculiar state of certain nerves, probably at their origin, may be reproduced at any moment by pressure, and are often relieved by remedies applied there.

"3. That, in all cases of tenderness of the cervical and upper dorsal spine, there was nausea, or vomiting, or pain of stomach, or affections of the upper extremities; but no pain of the abdomen, dysury, ischury, hysteralgia, or affections of the lower extremities.

"4. That in all cases of dorsal tenderness, pains affecting the abdomen, bladder, uterus, testes, or lower extremities, were usual symptoms; while nausea, vomiting, or affections of the upper extremities, were never complained of.

"5. That nausea and vomiting appeared to have more relation to tenderness of the cervical spine, pain of stomach to tenderness of dorsal; but that, when there was soreness of both, nausea or vomiting was still more frequent, and pain of the stomach scarcely ever absent.

"6. That, when several points or a great extent of the spinal column is painful and tender on pressure, local remedies are generally less effectual, and there is a strong disposition to transference of the disordered action from one organ to another; the pain or tenderness, in all such cases of transference, shifting its place to a corresponding part of the spinal column, leaving the original point free, or with a very diminished degree of tenderness.

"7. That spinal tenderness is seldom or never met with in cases of pure inflammation, except when these accidentally occur in persons previously suffering from irritation of the cord; and that, when appearances of inflammation present themselves in any organ accompanied by a corresponding spinal tenderness, they cannot commonly be removed by the remedies applicable to inflammatory cases, and are often rendered worse by them.

"8. That there does not appear to be a complaint to which the human frame is liable, whether inflammatory or otherwise, which may not be occasionally irritated in disturbed states of the cord; and hence that this disturbed state is one vast source of those complaints called hysterical or nervous.

"9. That those functional disorders connected with spinal tenderness are very often attended by some disturbance of the functions of the uterus, but that they are by no means always so, since they occur in those who are regular in this respect: in girls long before the menstrual period of life, in women after it has passed, and, lastly, in men of nervous, susceptible habits, and in boys.

"10. That in fact they are not necessarily dependent upon any one organ; since they are found indifferently coexisting with disturbance of the digestive organs solely, or the uterus solely, or of the circulatory or respiratory system.

"11. That from the cases detailed we have reason to suppose spinal tenderness may arise from uterine disorder, from dyspepsia, from worms in the alimentary passages, from affections of the liver, from mental emotions, from the poison of typhus, from marsh miasmata, from erysipelatous, rheumatic, and eruptive fevers, and from the irritation arising from local injury.

"12. That it is almost invariably found, in connection with gastric or abdominal tenderness, in fever; and this tenderness is probably like the soreness of scalp, pains in the limbs, etc., dependent on the morbid state of the cord.

"13. That, whether in fever or in other complaints, it is met with in the situation of the eighth or ninth dorsal vertebræ much more frequently than in any other part of the spine.

"14. That affections attended by spinal tenderness are seldom fatal; that, even in those cases of intense irritation of the cord under which patients suffer extremity of pain for years, the event is generally favorable.

"15. That they frequently, as well as hysteria, occur with all the appearances of a primary affection of the nervous system.

"16. That affections are occasionally met with presenting all the marks of the hysteric character, and perfectly resembling cases described as those of spinal irritation, but unattended by spinal tenderness or any other direct indication of a morbid state of the cord."

The treatment recommended consists in the removal of the cause if this still continues in action, purgatives, the application of blisters and leeches to the skin, the internal administration of hyoscyamus and belladonna, to lessen the nervous irritability, alum in cases of gastric derangement, and change of air and scene.

In a subsequent work, the Messrs. Griffin again discuss the subject, but bring forward no additional facts.

Dr. John Marshall is confident that many visceral affections, such as heart diseases, asthma, phthisis, dyspepsia, diabetes, chorea, and even phlegmasia dolens, are frequently really produced or simulated by spinal irritation. Some of his cases of supposed functional disorder of the spinal cord are, however, obviously organic, consisting of congestion, inflammation, or softening of the organ.

In his classical work, Ollivier devotes considerable space to what he calls "*an Affection described under the name of Spinal Irritation.*" He considers the pathological condition to be one of congestion of the meninges of the cord, and bases this opinion in great part on the success which, according to him, ensues, on the use of leeches, blisters, and counter-irritant ointments. In addition, he favors the administration of opium, digitalis, hyoscyamus, belladonna, and subcarbonate of iron.

Türck regards the phenomena of spinal irritation as being due, first, to disorder of other organs, whereby a morbid impression is propagated along the incident excitor nerves to the spinal cord, or, second, to derangement of the capillary circulation of the cord. That is, the disease may be either of eccentric or centric origin. He does not advance our knowledge beyond the point reached by previous authors.

Coming again to our own country, we find that in 1844 a very valuable paper was published by Prof. Austin Flint, based upon fifty-eight cases of functional disorder connected with an abnormal condition of the spinal cord. In this memoir, without going into any discussion relative to the pathology of the affection, Dr. Flint considers the disorder as giving rise to tenderness over the vertebral column, causing alterations of sensibility, as affecting the muscular system, as producing abnormal mental manifestations, as affecting the digestive organs, the genito-urinary organs, the heart and circulation, and as causing paroxysms of sinking. He then considers the physical habits of patients, the results of medical treatment, the probable remote causes, and then, at some length, the remedial measures which he has found most successful. Under this head, Dr. Flint advises the use of counter-irritants to the spine, especially cupping, and generally without scarification. Issues he found inapplicable, death ensuing in the one case in which he used them. There is no doubt, however, that in this instance he had an organic disease to deal with, and that the issues had nothing to do with the fatal result. Tonics, especially iron, he found to be of great advantage.

In a very full analysis of the medical reports of the Stockholm Hospital, by Dr. Magnus Huss, the subject of spinal irritation receives due consideration. Dr. Huss classes the symptoms of the disorder as follows: 1. Pain of various parts of the vertebral column, existing either idiopathically or developed by pressure. 2. Cramps, either of a clonic or tonic nature, in those parts subjected to the influence of the spinal cord. 3. Loss of power in the same portions of the body, ranging from simple stiffness and weakness to complete paralysis. 4. Altered sensibility, either by excess or by great diminution of sensation.

It will be observed that in this enumeration the author confines his specification of morbid phenomena to those which relate to sensation and the power of motion.

The treatment is fully and philosophically considered. Of external remedies he prefers counter-irritants, using the milder forms first, and then the severer, such as the moxa and the actual cautery, should the first fail. Venesection, either general or local, should be cautiously employed, and is not generally indicated. He is the first, so far as my researches extend, to mention electricity, a means which he thinks may be employed with advantage in chronic and debilitated cases. Potash-baths are also recommended.

Of internal remedies he specifies iron, opium, strychnia, phosphorus, and valerian, as being preëminently useful.

Axenfeld devotes a considerable portion of his treatise to spinal irritation. He regards it as being produced either by a trouble of innervation or congestion. In the treatment, leeches occupy the first place, and in light cases blisters, sinapisms, dry cups, and stimulating frictions, are useful. Internally he recommends nothing but quinine and iron.

Dr. Radcliffe writes very sensibly on the subject of spinal irritation, and gives a typical case which is quite instructive. He incidentally gives it as his opinion, that the pathological condition is one of anæmia, and he consequently discourages of use of leeches, relying mainly on blisters and tonics.

I have thus cited the principal authorities upon spinal irritation, without, however, by any means, exhausting the bibliography of the subject. Notwithstanding the eminence of many of those who have contended for the existence of a definite affection of the spinal cord, characterized by tenderness on pressure over one or more of the vertebræ, and certain eccentric disorders involving sensibility, the power of motion, and functional derangement of many of the viscera, it must be confessed that the great mass of the medical profession has regarded the whole theory with suspicion, if not with absolute distrust. The principal reason for this is undoubtedly to be found in the fact that, like many other new theories, that of spinal irritation has been applied to explain conditions which it could not logically be made to cover. Thus many cases of disease or disorder of the heart, due to organic difficulties of that organ, or excited by disease of other viscera through the sympathetic system, have been attributed to spinal irritation. The same is true also of the uterus, stomach, liver, and other organs, and even of the spinal cord itself, which often, when the seat of organic diseases, such as congestion, meningitis, inflammation, tumors, etc., has been regarded as simply in a state of irritation. It is very certain, also, that numberless cases of hysteria have been attributed to irritation of the spinal cord. In the following remarks I will endeavor to be as explicit as possible, and not to claim too much for a pathological condition which I am very sure exists, and which I therefore think is entitled to recognition. If I contribute any additional information, it will be mainly due to the fact that our means of examination are much more perfect and extensive, and our knowledge of physiology, pathology, and therapeutics, more thorough than when most of the authors I have quoted wrote upon the subject. My observations are based upon a careful study of eighty-three cases which have occurred in my private practice during the last five years, and of which I have full notes, and twenty-nine cases of which I have less complete data—in all, one hundred and twelve cases.

SYMPTOMS.

CENTRIC SYMPTOMS.—1. *Tenderness at some one or more Points over the Spinal Column, increased by Pressure.*—This is the essential symptom of spinal irritation, though varying in intensity from the slight degree of pain experienced upon strong pressure to the acute hyperæsthesia, which does not allow of even the contact of the clothing without the production of great suffering. It is generally complained of by the patient, though occasionally it has to be sought for by the physician. The brothers Griffin found this symptom present in all but five out of one hundred and forty-eight cases, and it is very probable that these five were not cases of spinal irritation, a supposition which the authors themselves evidently entertain. Certainly the details of the cases do not support the view which would ascribe their phenomena to any affection of the spinal cord. Most of the other authors I have cited refer to this tenderness as a prominent feature. Parish thinks it alone is to be relied upon as indicating irritation ; Mr. Whatton declares that it is never wanting ; Axenfeld regards it as the dominent and characteristic symptom ; and Radcliffe, while admitting that it is not equally well marked in every case, states the rule to be that spinal tenderness and spinal irritation go together.

On the other hand, Flint does not regard tenderness as an invariable and essential element of the affection under consideration. He found it absent or indistinct in five of his fifty-eight cases, while the other attendant circumstances furnished unequivocal evidence that the diagnosis was correct.

My own opinion would lead me to consider no case as one of spinal irritation in which tenderness on pressure over the vertebræ was absent. In the one hundred and twelve cases noted by me, this symptom was present in all. There are diseases of the spinal cord, which produce derangements of other organs of the body, and which are not characterized by vertebral tenderness, but these are far more serious affections than spinal irritation, and of altogether different pathology.

The seat of the tenderness is generally in the dorsal region of the spine. The Griffins found cervical tenderness in twenty-three cases, cervical and dorsal tenderness in forty-six, dorsal alone in twenty-three, dorsal and lumbar in fifteen, lumbar in thirteen, and the whole spine tender in twenty-three. Of one hundred and forty-eight cases, therefore, one hundred and seven exhibited tenderness in the dorsal region.

Dr. Flint found cervical and dorsal tenderness in three cases, lumbar and dorsal in ten, and dorsal alone in twenty-one cases.

Of my own cases, fifteen had cervical tenderness only, thirty-two cervical and dorsal, thirty-four dorsal only, twelve dorsal and lumbar, nine lumbar only, and in ten the whole spine was tender. Eighty-eight cases, therefore, of one hundred and twelve were characterized by dorsal tenderness, and in thirty-four it was limited to this region.

The degree and character of the tenderness are subject to great variation. In some cases strong pressure is required to develop it, while in others the least touch is insupportable. Sometimes there are shooting pains, which radiate from the tender spot, while at others the hyperæsthesia is quite circumscribed. In a gentleman now under my care with well marked spinal irritation, and who has a tender spot over the third lumbar vertebra, pressure not only causes intense suffering at that point, but develops pain along the whole course of the crural nerves and their branches as far as their terminations on the inner sides of the feet.

Another, a lady, who has spinal tenderness over the eighth cervical and first dorsal vertebræ, experiences, from pressure, intense pain along the course of the first intercostal, the internal anterior thoracic, and all the nerves of the left upper extremity. Why in these and other cases particular nerves should be affected, is a question which will be more fully considered hereafter.

The pain developed by pressure is not always of the same character. Sometimes it is dull and aching, and at others sharp and lancinating. I have not noticed that any very definite relation exists between the character of the pain and the severity of the other symptoms, though, as regards the degree of pain of each kind, there is a marked connection. By this I mean that a dull, aching sensation may indicate as profound a pathological condition, and be accompanied by as intense eccentric phenomena, as a sharp and lancinating pain, though a severe aching pain and a severe lancinating pain always indicate more serious disorder than when these sensations are not so emphatic.

The character of the pain varies in accordance with the tissue in which it is felt. The dull aching sensation is only developed by strong pressure, and is seated in the muscular, tendinous, or cartilaginous structures about the vertebræ. The sharp, piercing twinges excited by slight pressure arise from the skin, and subcutaneous cellular tissue. With these species of sensations, the æsthesiometer always shows increased sensibility of the skin, over and in the vicinity of the painful centres.

To ascertain whether or not the tissues outside of the spinal canal are in a state of hyperæsthesia, the pressure should be applied with gradually increasing force, by means of the thumbs applied to the spinous processes and the intervertebral spaces, as recommended by Flint. The examination should be thorough, and extend throughout the whole extent of the vertebral column. The fact that the patient denies the existence of tenderness should have no weight with the physician. Only a few days ago a young lady consulted me for severe infra-mammary pain, headache, and nausea. I at once suspected spinal irritation, but she declared, in answer to my inquiries, that there was no sign of tenderness anywhere over the spinal column. I insisted, however, on a manual examination, and to her great surprise found three spots that were exceedingly painful to slight pressure. This young lady had been treated for dyspepsia for several years, without deriving any benefit from the measures used, but was cured by the treatment which I shall presently fully consider. Occasionally it happens that the tenderness is not perceived for some time after the pressure is made. In a recent case I found the interval to be over a minute, and then acute pain, following the course of the nerves, was experienced. I am not prepared to offer an explanation of this phenomenon.

2. *Pain in the Spinal Cord.*—The tenderness just noticed is

seated primarily externally to the vertebral canal, and is developed by pressure. That which is now to be considered is located in the spinal cord, and is therefore capable of being produced by pressure upon non-tender spots. It is a very common symptom, having been present in one hundred and one of my cases. Generally it is confounded with spinal tenderness, from which, however, it is quite distinct. It is aggravated by motion of the spinal column, by action of the muscles which have their attachments to the spinous and transverse processes, by percussion and sometimes by the erect posture. In the case of a gentleman of this city, it was so great when he stood up that he was forced to keep the recumbent position nearly the whole time. When I first saw him he was wearing an apparatus designed to keep the weight of the head from the vertebral column, and to prevent the vertebræ pressing upon each other, under the idea that he had disease of the intervertebral substance. I removed the instrument, and, treating him for spinal irritation, he recovered his health in a few weeks.

Pain in the spinal cord, in the disorder under consideration, is usually seated near the point of external tenderness, though it is often at a distance, and sometimes is felt throughout the whole extent of the cord. The eccentric phenomena bear a distinct anatomical and physiological relation to it, as do those which are connected with spinal tenderness. There is likewise a similar connection existing between the pain in the cord and the vertebral tenderness.

To ascertain the existence of spinal pain, when it is not spontaneously felt or superinduced by muscular exertion, percussion should be practiced. The ends of the fingers will answer for this purpose, though I prefer a little vulcanized india-rubber hammer, and a plessimeter, such as are sometimes used for percussing the chest. Even over spots which exhibit much tenderness, the deep-seated pain in the cord itself can clearly be distinguished.

[To be continued.]

CÆSAREAN SECTION PERFORMED AFTER THE DEATH OF THE MOTHER.

Dr. Beckmann records an interesting case of this kind. In some preliminary observations he refers to a case in which the operation was performed successfully by a midwife on a woman struck dead by lightning, and quotes the observation of Henning: "That the results of the operation performed *post mortem matris* are but little favorable to the child, but that it is most likely to succeed when the death has followed some shock to the nervous system, as in apoplexy or traumatic injury to the brain and spinal cord; that it is less likely to terminate favorably to the child when the death-agony has been prolonged; and that it is most unfavorable of all in cases of suffocation with carbonic acid gas." The case given was that of a woman in the eighth month of her pregnancy, who had lost her consciousness during the pains on the previous day to that on which Dr. Beckmann was called in, and had never regained it. She was 25 years of age, a primapara of robust make, and with very ruddy cheeks, which appeared to be swollen. The conjunctivæ were ecchymosed, the pupils small, and bloody foam appeared about the mouth; there was great restlessness, accompanied by violent chronic spasms of the upper extremities. Lower extremities very œdematous, vesicular rale over the lower lobes of both lungs posteriorly. Pulse 120, full. The child was on examination found to be alive. Delivery proceeding, the os uteri slightly dilated, head presenting. Venesection was practiced, half a grain of morphia was injected subcutaneously, a purgative enema administered, and ice applied to the head. After four hours comatose symptoms occurred, with loud tracheal rattle, and in a few minutes she died. Remembering the investigations on animals made by Breslau, in which no instance of recovery of the fœtus took place when more than five minutes had been allowed to elapse after the death of the mother, Dr. Beckmann at once applied to the husband to be allowed to perform the Cæsarean operation. Permission was granted, and five minutes after the last inspiration and contraction of the heart, the section was made with an abscess lancet, no other instrument being at hand. The child on being withdrawn weighed four pounds, was apparently dead, the heart scarcely beating perceptibly. In the course of two and a half hours it began to breathe with regularity, after prolonged and varied modes of promoting artificial inspiration had been adopted. It is now growing up a fine healthy child. The operation was performed on the 4th March, 1867.—*Berliner Klinische Wochenschrift*, No. 51, 1869.

CHLORAL HYDRATE IN CHOREA.—Dr. James Russell reports a case of chorea occurring during pregnancy successfully treated by the chloral hydrate.—*London Medical Times and Gazette.*

Pharmacy.

ASSAY OF CINCHONA BARKS AND OF OPIUM.—Hager, who has bestowed much attention on the most rapid, easy, and reliable methods of estimating the value of crude drugs, proposes for the assay of cinchona barks the following plan: 100 grains of the powdered sample are boiled for a quarter of an hour with about three ounces of water, to which have been added 14 drops of potassa lye; 2½ drachms of diluted sulphuric acid are added, and the boiling continued fifteen to twenty minutes. The liquid is then brought on a filter, and the filtrate collected in a graduated cylinder glass. Ten drachms are then precipitated with 8½ drachms of a solution of picric acid, saturated at a medium temperature. After half an hour the precipitate is collected on a tared filter, washed and dried between unsized paper. The picrates of the cinchona alkaloids being nearly insoluble, the weight of this precipitate furnishes the basis for calculating the quantity of the alkaloids present in the sample under assay. Officinal bark ought to contain 3½ per cent of alkaloids, which would correspond to 8.24 grains, very nearly, of the precipitated picrates.

For obtaining the morphia strength of opium, Hager's process is as follows: 100 grains of the powdered dry sample are triturated with 40 grains of freshly slacked lime; the mixture is heated for an hour with about two ounces of distilled water, then transferred to a filter previously moistened, and the residuum washed with warm water till the filtrate shows only a slight yellow color and weighs about 4 ounces. This is evaporated to 1,000 grains, put into a bottle and when still tepid, 300 grains ether, and 8 drops pure benzine are added and the mixture shaken; afterwards, 70 grains ammonium chloride in small crystals are added, and when they have dissolved, the shaking is continued (if shaken before the crystals have disappeared, the morphine adheres to the glass). The bottle is then allowed to stand for three hours. The morphine, which has by that time separated, is collected on a damp filter, washed, dried at 120° F., and weighed. The impurities, as shown by a series of carefully conducted experiments, amount to about 10 per cent the weight of the crude morphine; $\frac{1}{10}$ of this should therefore be deducted for approximate weight of the morphine contained in the sample.

Jacobson's process differs from this chiefly in the treatment of the precipitated morphine, which is well washed with chloroform before the final weighing.—*Proc. Am. Pharm. Assoc.*

TORPEDO PRESCRIPTIONS.—Several instances have been reported recently where prescriptions have been sent to the druggist, the ingredients of which have been found—sometimes to the serious damage of the compounder—to afford dangerously explosive combinations. In one case potassium chlorate and sodium hypophosphite were ordered in solution in the same prescription. The druggist, forgetful of the caution which should always be exercised in dealing with chlorates, placed the dry salts together in a mortar, and commenced triturating them preparatory to adding the other ingredients of the prescription. A violent explosion, which luckily did no damage, reminded him that he was dealing with one of a class of phosphorus compounds in which the properties of the element are but slightly masked by the small proportion of oxygen with which it is combined, and warned him not to repeat the experiment unless as a matter of amusement. Accidents have repeatedly occurred from carelessness in grinding up potassium chlorate with combustible substances, such as tannic acid, sugar, etc. It is safer always to pulverize the chlorate separately, even when it is to be mixed with other mineral compounds, not so much from any actual danger in such cases, as to keep before the mind the necessity of caution in handling a compound so potent for mischief.

Another super-oxygenated compound, that has given rise to several serious accidents, is potassium permanganate. The same caution should be observed in dealing with this salt as with the chlorate. It is decomposed, sometimes with ignition, by glycerine and by many of the essential oils and other hydrocarbons. If this fact were known, surgeons would not be guilty of sprinkling powdered permanganate over a glycerine dressing, and apothecaries would not attempt to use syrup of gum as an excipient for permanganate in pills. Among the combustibles, which have more than once given rise to accidents, we may mention carbolic acid. Mixed with strong nitric acid, it causes an instantaneous explosion, apparently with no great evolution of heat, but with abundant disengagement of nitrous fumes. Rubbed in a mortar with potassium permanganate, it ignites often with explosion, and it is scarcely less " compatible " with the chlorates.

These facts ought to be familiar to the physician, as well as to the chemist and apothecary, for the doctor will get no credit if his prescription happens to kill the wrong man.

PURIFICATION OF WATER.—Dr. Dunning of Amsterdam, recommends, for the purification of dirty water for household and manufacturing purposes, the addition of chloride of iron in the proportion of half a grain to the quart of water. The impurities are thus in large measure separated, and by the further addition of soda, 1½ grains to the quart, the iron is precipitated. The method has been employed in Holland with very satisfactory results.—*Boston Journal of Chemistry.*

TO REMOVE GYPSUM FROM WATER.—Dr. Riecker recommends in the *Neues Jahrbuch für Pharmacie* the use of witherite, the native barium carbonate. The mineral, reduced to a fine powder, is simply mixed thoroughly with the water by stirring; double decomposition takes place, with the formation of insoluble barium sulphate and calcium carbonate, and after time has been given for the sediment to settle, the clear water is found quite free from hardness. The quantity of witherite to be employed will depend, of course, on the amount of sulphate of lime originally present in the water. The weight of the former should somewhat exceed that of the latter, calculated as crystallized gypsum.

As a means of removing organic impurities from water, it is recommended to filter through a layer of magnetic oxide of iron. The oxide retains its efficiency for a long time, and is said to be superior to any of the agents that have been hitherto in use.

ALUMINIUM.—A new process has been devised for extracting this valuable metal from the clay bed where it has been obliged to lie so long unutilized, on account of the expense attending its reduction. The clay is mixed intimately with coal tar, petroleum or resin, and placed in a retort, which is then heated to redness while common illuminating gas is forced into it under a pressure of two atmospheres, as long as it continues to be absorbed. It is believed that the metal can be procured by this method at a very moderate cost, and that it will soon be put to a multitude of uses for which its rare combination of excellent qualities fit it.

THE German for chloral hydrate is trichloracetoxylwasserstoff, or, by way of variety, trichlorethylhydrocarbonoxyd, or again, trichloracetyloxydhydrat. Among English chemists it is sometimes designated trichlorinated ethylic aldehyd, but the abbreviated chloral, like the analogous chloroform, names suggesting rather than expressing the composition of the substances they designate, has been almost universally adopted for every day use by the chemist as well as by the physician.

FIAT JUSTITIA.—In a late number of the *Chicago Pharmacist* there was published an article detailing certain experiments performed by Prof. Crofts, by which that chemist was led to conclude that *svapnia* contains *no morphine.* The article is published without comment by the editors, and the inference naturally is that they accept the conclusions of Prof. Crofts, and consequently regard svapnia as no less a fraud than the "light quinine" whose true nature they have exposed. They overlook the fact that an elaborate analysis published in the *American Journal of Pharmacy* last year, proved that this preparation is very nearly what it purports to be, viz., opium freed from some of its more poisonous alkaloids—purified opium, as it was originally called by Dr. Bigelow. In regard to the experiments of Prof. Crofts, we can only say that he must have obtained a spurious article of svapnia, or else have drawn his conclusions very hastily. To satisfy myself that this was the case, I repeated, myself, some of the experiments described—rude tests indeed, it must be admitted—and in every case obtained evidence of the presence of morphine. Of course, it could not be expected that the perchloride of iron test would give evidence of morphine in presence of meconic acid, to say nothing of the large amount of foreign matters also present. There is room, perhaps, for a difference of opinion in regard to proprietary medicines, but to condemn an article as spurious, on insufficient evidence, is sometimes to do an honest man injustice.

Editorial.

HIDDEN LIGHT.

In other words, no light at all seems to be the kind shed by a large portion of the medical profession, so far as giving the results of their observation and experience for the benefit of humanity goes. It is a universally acknowledged truth that no person has a right to withhold from the world the use of any valuable facts he may have discovered. In the various useful arts, the publication of valuable inventions is stimulated by the certainty of pecuniary emolument returning to the inventor. Our own profession takes higher ground and demands that what its members discover shall be free to all. The result of this is that much of great value to the world is lost and forgotten, few having sufficient regard for the æsthetic rewards which accrue to philanthropists, to spend time and brain work to publish their knowledge. It is, however, a mistaken notion that the publication of new facts does not return immediate advantage to the author, on the contrary it is useful in two ways; first, the enunciation of knowledge in words renders more definite and extensive our own apprehension of it. What may have been present to the mind in a vague, general way, assumes clearness when we put it on paper, and thus becomes more available for use. We are led also to follow the thought out more into detail and often to realize widely extended applications of it, before unknown. The simple effort of defining our knowledge for the advantage of others strengthens the thinking power, and gives increased clearness in the general apprehension of phenomena. In short, to the student habituated to express his knowledge, the area of vision swept by the mind's eye is constantly growing wider and the atmosphere clearer, while new avenues promising rich returns open out into the dim unknown regions of science.

Second, the men who express their views and beliefs most freely through the medium of the press, become the leaders of thought to those who are reticent; they are regarded as experts and looked up to as men of wide research, whose opinion is worth much, and are naturally sought as counsel in difficult cases. Many of the most distinguished teachers of medical science have found articles published in the journals of the day to have been the stepping-stones to their fame.

From the foregoing considerations it would seem that there is every incentive to medical men to establish the habit of committing their views to writing and to the press; yet how few names out of the mass of the profession do we find in our periodicals. Every journal has its clique of contributors, upon whom it depends month after month for original matter. Occasionally the editors are gratified at the reception of an article from some outside friend who breaks his scriptorial lethargy for one moment, to our great gratification, but anon hides his pen and we hear no more of him. Can we not see a reform? Brother doctors, remember that we are always glad to hear from you.

In the matter of writing, it is far better to aim at brevity than prolixity. A short, terse article, detailing facts as observed, whether cases, hygienic phenomena, or climatic peculiarities, will be read, since each of these branches will be found to afford much of general interest and value, coming under the view of every practitioner. Even in relation to common diseases, such as epidemics of pertussis, rubeola, scarlatina, etc., many points are still obscure and illy understood, upon which much light may be thrown by comparing the observations of men widely scattered and viewing the subjects from different standpoints. There certainly need be no lack of material to any one, and the fear of not being able to give matters of interest is also idle, since our humanity has so much in common, that generally what is of special interest to one man will also yield entertainment to many others.

We would call attention to the advertisement on another page of "Nestle's Lacteous Farina" as a substitute for milk. We have used it for the past six months in a large number of cases, and invariably with satisfaction. Children thrive better upon it than upon cow's milk, at least such as can be obtained in the city, and it possesses the advantage of having always the same composition. Especially have we found this preparation useful in the large number of cases where the mother is unable to supply sufficient nourishment to her offspring. We hope that the manufacturers will realize fully that they can succeed in keeping the market only by maintaining the standard of the article faithfully, for so soon as it is shall be found lacking the profession will drop it at once.

BOOK NOTICES.

A PRACTICAL TREATISE ON THE DIAGNOSIS, PATHOLOGY AND TREATMENT OF DISEASES OF THE HEART. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College. Second edition, thoroughly revised and enlarged. Published by H. C. Lea, Philadelphia. 1870.

The first edition of this work was published ten years since, and at once took its place at the head of all American literature upon this subject. Indeed, for practical value it is not surpassed by any work whatever. The new edition contains many additions and some corrections which the advance of science and the wide experience of the author have rendered necessary, so that it is now fully up to the wants of the practitioner. The elaborate details in regard to physical diagnosis leave no excuse for any physician neglecting to perfect himself in this most important and necessary branch of medical science.

THE INDIGESTIONS or Diseases of the Digestive Organs Functionally Treated. By Thomas King Chambers, author of Renewal of Life, etc. Third American edition, revised. Published by Henry C. Lea, Philadelphia. 1870.

It is but two years since we noticed the second edition of this work, so that it is needless to reiterate what we then said. Dr. Chambers has gained a wide and well deserved reputation as a writer, and has done perhaps more than any one author to make prominent and clearly understood the pathology of functional derangements of the digestive system and to point out the most rational method of dealing with them. The elegance of style which pervades all of this author's writings makes the labor of reading them rather a pastime. The present edition is somewhat enlarged by the addition of a large number of cases, in connection with which a portion of the text has been rewritten.

For sale in Detroit by J. M. Arnold & Co.

ARCHIVES OF OPHTHALMOLOGY AND OTOLOGY. Edited and published simultaneously in English and German. By Prof. H. Knapp, M. D., in New York, and Prof. S. Moos in Heidelberg. Vol. I., No. 1. Published by Wm. Wood & Co., New York. 1869. Pp. 359.

We take great pleasure in calling attention to this magnificent work, which reflects a high degree of honor upon the editors, and is a marked proof of enterprise in the publishers. We trust its merits will secure for it a remunerative circulation. The present number comprises a variety of valuable papers by distinguished continental and American specialists, and is enriched by twelve elaborate plates, a portion printed in oil colors and others plain. We learn that the second number is to be published in May, 1870, and will contain about three hundred pages.

New editions of Gray's Anatomy and Basham on the Kidneys received.

PAMPHLETS AND JOURNALS RECEIVED.

SECOND ANNUAL REPORT of the Secretary of State of the State of Michigan, Relating to the Registry and Return of Births, Marriages and Deaths. W. S. George & Co., publishers, Lansing, Mich. We find many items of interest in this report, meager and imperfect as it is from the failure, in a large number of cases, by the proper authorities to make returns; yet, in so far as it goes, it gives highly valuable statistics. Especially does it make apparent the salubrity of the climate of Michigan and the advantages that it offers in this respect to emigrants. Typographically the Report appears well and is a credit to its publishers.

THE TRANSACTIONS of the Medical Association of the State of Missouri for 1867, 1868 and 1869, with an appendix comprising a number of interesting papers by various authors.

ANNUAL METEOROLOGICAL SYNOPSIS. By J. B. Trembley, M. D., Toledo, Ohio. For 1869. From the author.

THE *Indiana Journal of Medicine*, edited by Thad. M. Stevens, M. D.; W. H. Fletcher, M. D., and Guido Bell, M. D., associate editors. Vol. I., No. 1, for May, 1870; pp. 32; monthly.

THE REMEDIES WE USE. Author unknown. Nashville, Tenn.

LIQUOR OPII COMPOSITUS. By E. R. Squibb, M. D., of Brooklyn, N. Y. From the author.

Harper's New Monthly Magazine for June, the *Weekly* and *Bazar*, are promptly received and maintain fully their reputation in their respective departments. The *Atlantic Monthly*, *Every Saturday* and *Our Young Folks*, continue their periodical visits, and prove that the "Hub" is as wide awake as ever in literature. *Good Health*, a semi-professional periodical, thus far seems to be well sustained and affords to the public, monthly, much useful information relating to hygiene, physiology, etc. Alexander Moore publisher, Boston.

Peterson's Monthly for June received. Agriculturally we are favored by our old friends, L. Tucker & Son, with the *Weekly Cultivator and Country Gentleman*, always good and welcome even to city denizens. Meehan's *Gardeners' Monthly*, devoted more especially to the interests of horticulture, gives us the latest information in regard to rare novelties among fruits and flowers. Also at hand, *Western Rural* and *Michigan Farmer*, and last, though not by any means least, the *American Agriculturist*, full of good things.

DETROIT
Review of Medicine and Pharmacy.

VOL. V. JULY, 1870. No. 7.

MEDICAL EVIDENCE IN ITS BEARING UPON JURISPRUDENCE.

By S. P. Duffield, Ph. D., M. D., Prof. of Chemistry and Toxicology in the Detroit Medical College.

EVIDENCE, either of the common witness or of the expert, lies at the foundation of all justice. This flows naturally from a due regard to the interests of the community.

In order to insure an equal and exact justice, the *best evidence* within the reach of the tribunal should be had. Thus, when any controversy originates among shippers or warehouse men, the testimony of those following these particular callings is sought for, and then every day usages and customs are considered as a part of the law.

So, when death or serious injury results to an individual, through what may be supposed to be criminal neglect, the physician whose profession and studies have given him a *special* knowledge, is called upon not only to *examine* the facts of the case, but to give his opinion. The emperor Charlemagne recognized the propriety of such a course in one of his issued edicts, but it was left for Charles V, in the celebrated Caroline Code, to order that the opinion of medical men should be taken in every case of violent death over which more or less mystery hung. This was about 1532.

Most European nations followed, as would be naturally supposed, this worthy example. There never has been a provision by statute in England. Custom, strengthened and sanctioned by judicial authority, has rendered an appeal to medical testimony actually obligatory upon the magistrate. Carrington and Payne

(571) say: "It is the duty of the coroner, in the case of death in a pugilistic encounter, to examine a surgeon as to the cause of death." The revised statutes declare that it shall be the duty of the coroner to cause some surgeon or physician to be subpœnaed to appear as a witness on taking an inquest. And here I may remark that the coroner has the right and power to compel a physician or surgeon to attend and testify, but he can not oblige him to make post-mortem examinations or chemical analyses. The law claims a right to the knowledge actually possessed by the witness, but can not force him to increase that knowledge. In England the coroner is empowered to remunerate the medical witness, but no such power exists in New York and, as far as I can learn, in Michigan. In Virginia he is authorized to summon medical witnesses, and give them a reasonable compensation. In Georgia the same law exists, and liberal fees are awarded. In our own State it is well for the medical witness to have the prosecuting attorney give his note as security, if said attorney is considered to be valid security, that is, if he possesses real estate upon which you can fall back in case of a refusal to pay. Should the medical witness not take that precaution, he is then at the mercy of the board of supervisors, who divide, from sense of duty (?), every bill into halves, and pay only half the amount. There is also a point medical experts should thoroughly understand, and that is, if one acquires by investigation pending the examination certain facts, and has not first secured his payment for the labor bestowed, the law can and does compel him to give these facts in his testimony. So his only hope is to secure his remuneration beforehand.

Let the medical expert insist, as he always should do, that he will not move one step in the investigation unless there is secured to him a reasonable compensation for the labor to be performed. Another of the *rights* of the medical witness is that of making a post-mortem examination should he deem it necessary.

Coroners who do not understand the law fully may, and often do, object to this as in their (worshipful) judgment unnecessary; but let the medical witness understand that this is an *impertinent* interference, and he can refuse to give an opinion until he is allowed to take the necessary means to form a correct one. He has, in short, full power and *right to satisfy himself* as to the probable cause of death. Should he entertain the slightest doubt, he has the right to demand a dissection of the cadaver, or to refuse to give testimony should this be denied. It makes no difference whether the doubt is advanced, or whether the law is imperative on the coroner to have the body opened. The medical witness can refuse to give any testimony, or, better still, say he has none to give until he is permitted to satisfy his own mind and conscience as to "how and in what manner" the deceased came to his death.

Nor should any medical witness allow himself to be bluffed by officiousness of coroners or others. Let him see that the body is delivered over to him in a legal manner, and then, having *obtained possession, let him hold it exclusive* of all intrusion, and calmly and deliberately proceed with the examination until he is satisfied. At this point it may not be out of place to suggest that when a post-mortem examination is undertaken, it *should be thoroughly done.* Some post-mortem examinations have thrown disgrace upon an honorable profession, and have actually *shielded* crime, because they were assumed to be done, and so loosely done, that many doubts were left which would have been dispelled had the examination been more thorough and conscientious.

The physician can find a systematic course laid out in various works, and one especially clear, as to its methods of procedure, is that which appears in the Appendix of Dr. Beales' Microscope in Practical Medicine.

I would here take up the question, Who are experts? A vexed question, indeed, on which the medical and legal professions have not yet fully agreed. But as law must be based upon their ideas of justice, and as they ignore all schools of medicine, accepting every pretender and rejecting none, from the principles which they have imbibed, the definition which covers and includes the word medical expert is broader than the Atlantic ocean, and has vastly less definable boundaries. It is from this misinterpretation of the term expert that perpetual attrition and misunderstanding between the members of the legal and medical professions arises. That all this is unnecessary the highest legal and medical authorities both admit. "That it is," says Ordronaux, "an obstacle to the discovery of truth the history of every case seems only to exemplify, and that it is an obstacle to the course of justice a moment's reflection will serve to show. Under the shadow of these convictions it becomes the duty of both professions to endeavor to eliminate from the field of their common labors all causes of and provocations to differences of opinion. But it is hopeless to expect this while either profession refuses any concession to the other.

Much difficulty between lawyers and medical experts springs from the point from which each party views the expert. Counsel as a general rule ignore anything like high moral principle governing them during a trial; they have a direct interest in making their proofs accord with their allegations; indeed, they very often pervert honorable means to accomplish this purpose. Consequently, the answers they seek to extort from the expert are in the nature of absolute and irrefragable. On the part of the expert, he, having no interest in the issue, seeks merely to resolve the problem set before him in the simplest and most precise manner.

Counsel have the vantage ground in the examination, and, as the only test of an expert in the court of the present day is the power to withstand cross-examination, it being assumed that he is to be tested in this way, not only error but actual injustice is committed in taking a good, honest physician, who may not be fully skilled as to his duties as regards what he shall answer in the legal sense, but who desires to give "the whole truth and nothing but the truth," and narrowing his answers down to simple yes or no, to categorical propositions. So sure as our honest doctor answers in this way, he is sure to get into trouble; he will be persistently cramped with a demand for unqualified answers, when explanations would be sometimes necessary, but when he is afraid, or is too modest, or does not understand enough of the points of law to ask for the right of explanation.

But in addition to the method of circumscribing the power of the medical expert is the loose, illogical, and, I may truly say, the intentionally ambiguous form in which questions are put. Just in proportion as the testimony of the expert is of value, and has a bearing upon one or other side of the case, and becomes lucid and forcible evidence, will the cross-examination be severe, confusing and vexatious; and when all other means have been tried to overthrow him and failed, the gentlemanly (?) advocate will make some uncourteous remark or sarcastic insinuation, goading the temper and good nature to the utmost, that he may compel the medical witness to loose his temper, and say things which would weaken his testimony. Every medical witness must be prepared for these; he should then, above all other times, be cool; he should

> " Sit like his grandsire,
> Cut in alabaster,"

impassive, beneath the influences which, under other circumstances, should influence to action. Let the medical witness remember that because a man is authorized to ask questions it does not necessarily follow that he is the wiser of the two. An examination may be as much for personal information as for anything else. Following it to its natural sequence, a case involving expert testimony is certainly one in which the former inference would be drawn. Hence, by protracting the cross-examination, should the legal gentleman fail to upset grave testimony, it becomes mere logomachy, and there is a certainty, should he not get you angry, he will be very apt to "hoist himself with his own petard."

Should the legal gentleman become insolent and overbearing, you have only to appeal to the court for protection, and the court will always give it.

Finally, it is much to be regretted that courts do not exercise a more critical scrutiny over the examination of experts, and protect them from the inevitable antagonism in which they are placed. Experts should be examined by the court alone, and should be summoned by the court, and should not be summoned by either party. In this way we would destroy all the feelings that the expert has a bias one side or the other. This could be done here as well as in Europe, where the expert is treated more as an amicus curiæ, a friend of the court, than he is under the laws of the United States.

Reports of Societies.

DETROIT ACADEMY OF MEDICINE.

Dr. Walker read a paper on general syphilis, describing briefly the history and general characteristics of the disease.

The subject of discussion for the evening was post-partum hemorrhage, with special reference to the use of the perchloride of iron, as recommended in Dr. Gilmartin's paper, at the previous meeting.

Dr. Webber, in opening the discussion, said that he had had no experience in the use of the perchloride of iron. He should prefer, however, to rely upon ergot in dangerous cases, as he had always been successful in its use. The perchloride of iron had been said to excite inflammation; for that reason, therefore, he had avoided it.

Dr. Jenks—I have not used the perchloride of iron in this way, and should not like to use it. I prefer the time-honored remedies, cold water and ice, a peeled lemon introduced into the uterus, and ergot; external pressure, too, is important. In anæmic women, I should advise opium with the ergot. Many cases called post-partum hemorrhage are not really so. Some flow of blood is to be expected, and in plethoric women a considerable amount of it. I have known a physician who had been in practice forty years without having a fatal case of post-partum hemorrhage; another, who had been in practice twenty years, gives the same testimony. A man in Wisconsin advises cold water injections per rectum.

Dr. Lyster—I have not used the perchloride of iron. I have placed great reliance upon the use of cold water and ice and external pressure. Ergot will, I think, generally prevent post-partum hemorrhage if administered at the time of delivery. Morphia, in debilitated cases, I should think, would be advisable. I have seen a notice of a case in which a sponge wet with cold water was introduced into the uterus and left till the next day.

Dr. Bigelow—I have had considerable experience in obstetrics during the forty years that I have been in practice, but have had no fatal case of post-partum hemorrhage. I have been pleased with the use of ergot and the ordinary remedies mentioned. I have not used the iron.

Dr. Book—I have not used the perchloride of iron in this way. It has, however, the high authority of Dr. Hicks, of London, who claims to have had great success with it.

Dr. Gustin—With regard to the iron, I cannot speak from experience. Ergot I have often given, but have been led to think in these cases that the hemorrhage would have ceased from the use of the other remedies employed.

Dr. Thom—The ordinary remedies have always been sufficient, in my practice, to prevent death from post-partum hemorrhage, still it seems quite desirable to have other remedies for use in extreme cases.

Dr. Noyes—I cannot remember to have ever had more than one really alarming case of post-partum hemorrhage. This patient I left in good condition, with the uterus well contracted, to go to breakfast in her house, when I was called back suddenly, and found her flooding. By introducing the hand into the uterus, and using ice externally and internally, the bleeding was finally stopped. Ergot, for some reason, though a most valuable agent, does not always act. The perchloride of iron is a new remedy, and seems to lie open to some objections; but it is to be remembered that the gravid uterus bears astringents better than the non-gravid. I would also call attention to the importance of lowering the head.

Dr. Thom—I have noticed that the pulse is more accelerated in cases subject to severe post-partum hemorrhage.

Dr. Stewart—I have had none, but know of four fatal cases of this character. Two occurred in the Toronto lying-in hospital, one was attended by a midwife in the country, and the other death was occasioned by delay in obtaining a physician. I have seen the best effects from the use of the acetate of lead, in doses of ʒj. It acts promptly and in the worst cases, without producing any symptoms of lead poisoning.

Dr. Andrews—I have met with two fatal cases of post-partum hemorrhage. One was very fat, and it is probable there was fatty heart, as the flooding was stopped promptly by ergot and was not renewed, and she lived several hours; the other died from pure exsanguination, as the result of placenta prævia. When I was called she had been flooding for three or four hours, and was moribund; the blood had ceased flowing, and no stimulants had any effect to arouse her. I should not be afraid to use iron, though as yet I have not employed it. Of all remedies used in the lying-in room, I especially dread chloroform. It relaxes the fibres and I believe often induces severe hemorrhage.

Dr. Lyster—The necessity of carefully removing the placenta and membranes should not be forgotten; also, it is important to pay attention to the general heat of the system while applying ice and cold water locally. While chloroform may be open to the objections mentioned, the same do not apply, I think, to a mixture of ether and alcohol.

Dr. Gustin—With regard to the acetate of lead, I have met with many gentlemen of large experience who have mentioned this remedy, given in drachm doses, as their chief reliance in cases where consciousness still remains.

Dr. Gilmartin—I may say, in defence of my recommendation of the perchloride of iron, that it is not by any means intended to displace other remedies in this dangerous condition, but merely to add one to our stock of valuable agents. Experience on the part of eminent men who have used this remedy seems to prove conclusively that there is no danger of irritating the uterus with it; chloroform undoubtedly increases a tendency to hemorrhage. For some reasons the uterus often fails to respond to any remedies, as, for instance, in neuralgia of the uterus—a rare condition—and cases of mechanical distension, in which the organ is kept in its place by adhesions with surrounding parts.

Dr. Inglis—Perhaps I may say with truth that I have had no fatal case of post-partum hemorrhage, though I have had a case that died in a few days after delivery, from the exhaustion and fever consequent upon the loss of blood. If the pulse is above 100 after delivery, I think that there is a probability of hemorrhage; so if the pulse is rapid before the expulsion of the child. In one case of severe hemorrhage, the flow of blood was controlled by the injection of ice-water into the rectum. I have always had good results from this treatment. With regard to chloroform, I think that the sooner it disappears from medical practice the better. We have other remedies, equally efficient, that are not dangerous. Numerous cases of death are constantly warning us of its danger.

Dr. Duffield—With regard to the irritant qualities of the perchloride which have been spoken of, it would seem that if such a property were found in the salt, it must be occasioned by some fault in the preparation. The salt should be evaporated to dryness, which drives off entirely the hydrochloric acid. Then the perchloride is immediately enveloped in coagula of blood, which prevents any injury to the uterus. I think that this salt is superior to the persulphate in producing the coagulation of blood.

Dr. Inglis—It is an interesting question for discussion on some future occasion, "What is the cause of the rapid pulse before post-partum hemorrhage?"

ANNUAL MEETING OF THE STATE MEDICAL SOCIETY.

The Michigan State Medical Society held its fourth annual meeting, according to adjournment, at Lansing, on Wednesday and Thursday, 8th and 9th of June.

PROCEEDINGS OF THE FIRST DAY.

The meeting was called to order at 11 o'clock, President Inglis in the chair, and Dr. Ranney, of Lansing, Secretary. On calling the roll, thirteen members answered to their names. Dr. Jerome moved that a committee of three be appointed to examine the credentials of candidates for membership in the Society. Adopted.

The committee, appointed by the chair, consisted of Drs. J. H. Jerome, Saginaw City; Wm. Parmenter, Vermontville; Alanson Cornell, Ionia. After a five minutes' recess the committee brought in a report, recommending the following gentlemen for admission to the Society: Homer O. Hitchcock, Kalamazoo; Moses Porter, Kalamazoo; Gilbert E. Corbin, St. Johns; Samuel Perkey, Charlotte; Henry B. Baker, Wenona; Hulbert B. Shank, Lansing; H. B. Barnes, Ionia; William Dowlman, Ionia. Moved, that the gentlemen named in the report be received to membership. Adopted.

The Society then adjourned to meet at 2 o'clock P. M.

AFTERNOON SESSION.

The Secretary read a communication from the State Medical Society of New York, inviting representatives from this Society to attend their next annual meeting. On motion of Dr. Jenks the invitation was accepted. An invitation, extended to members of the Society, by Dr. Geo. E. Ranney, to accept the hospitalities of his house in the evening, was accepted; also an invitation from P. C. Abbott, President of the Agricultural College, for the Society to visit that institution before their final adjournment. A communication received from the Kalamazoo Medical Association, inviting the State Society to hold its next annual meeting at Kalamazoo, was laid on the table.

Dr. Jenks, as chairman of a committee appointed for that purpose, submitted a report on the registration of regular physicians in this State, in which he urged the importance of the measure, and recommended a plan by which it might be carried out without imposing too great a burden on any one individual. He favored the appointment of a committee, to consist of one member from each county in the State, and suggested as chairman of the committee, Dr. A. B. Lyons, of Detroit. Accepted and referred to Committee on Publication.

The Society then listened to the address of the retiring President, Dr. Inglis, of Detroit.

Several similar societies, he said, have been organized in the State during its history, which have flourished for a time and then died in apathy. That will inevitably be the fate of this organization unless there is a lively and wide-spread interest taken in it by the profession throughout the State. He briefly reviewed the history of these societies, beginning back in territorial times, and came down to the organization of the present body, when four years ago 100 gentlemen from all parts of the State met and formed it. At subsequent annual meetings there have been present forty or fifty members, about one-half of them residents of Detroit. Of the fifty-seven counties in the State, not more than twelve or fifteen have been represented by even a single delegate. Why this apathy in regard to the welfare of an organization whose utility is generally admitted, this indifference with regard to its proceedings, and neglect even of its very existence? It arises partly, perhaps, from a misapprehension of the character and office of such an organization. The attempt is constantly made to invest societies of this kind with a certain legislative authority. The result of such attempts is always ultimately disastrous; to this cause more than any other we attribute the failure in the past of efforts to maintain a State society, and the same cause threatens to-day the ruin of our National Association. To promote the advancement of scientific knowledge, to cultivate a mutual fraternal regard between members of the profession, and at the same time to stimulate each and all to nobler endeavors and higher attainments—these are among the principal objects to be attained by associations like ours. Admission to our membership should be esteemed an honor and a privilege, and not merely a right which any one who holds simply a diploma may claim. The society should be composed, too, largely of men who represent local societies, the prominent men therefore in the profession, and those who take the most lively interest in promoting its welfare.

The idea that the practice of medicine in this country can be controlled by legislative enactments and that either the public or the profession can be protected against the evils of irregular practice by stated penalties, is a delusion. The people will demand freedom of opinion in the choice of their physician as much as freedom of conscience in religion, and to shed tears of sorrow over a deluded people who will not submit to be protected against the dangers of charlatanism is, to say the least of it, a vain waste of sentiment.

If our profession cannot maintain its ground (on its own merits in this free and enlightened land), then let it give place to something that can. We cannot indeed more effectively aid and abet quackery, than by instituting in the name of the law, a persecution against it. Even the exclusion of Homœopathy from our State University has enabled the partisans of that school to raise a clamor for equal rights and privileges, and to be heard in our legislative halls, in our courts and before the board of regents, and so far an undue notriety has been given to the doctrines of Hahnemann, throughout the State. The statistics of Wayne county show that out of one hundred and fifty-one persons licensed to practice medicine, ninety-one are graduates from regular medical colleges. Judging from these and other statistics that have been collected from abroad, we cannot regard as just the accusation recently made against our State, that it is a hot bed of quackery..

It has become fashionable at the meetings of the American Medical Association, .and elsewhere, to speak in a most disparaging manner of the professional and literary acquirements of the physicians of America. A comparison drawn between the physicians of Europe and those of our own country will not make the latter appear at all at a disadvantage. It is true that the country doctor among us may have forgotten much of his classics, and of the learning of the schools, but for general knowledge of his profession, clearness of apprehension in diagnosis, and skill in applying remedial agents, in all the various departments of medicine and surgery, he would often excel his learned brother of the metropolis. As a means of bringing out our native talent, and of improving the intellectual attainments of our physicians, nothing can be better adapted than properly constituted local medical societies.

The medical fraternity of Michigan, he said, have shown the benefits of the rapid increase of wealth in its State, and although it very seldom falls to the lot of physicians to be rich, yet, as a whole, they are a well to do class of men. There are some things in this world that can not be estimated at a cash value—the self-abnegation which led Dr. Livingston to the wild wastes of Africa, or our own lamented Kane to the Arctic Seas, devoting their lives cheerfully to the cause of science and humanity, cannot be remunerated with gold. So it is with every physician—a higher and a nobler and holier motive must actuate him, not the mere accumulation of wealth, or his profession will be an irksome one, and his toil unrecompensed.

It has been customary on these occasions to make a note of the facilities for medical education in the State. The medical department of the university, for a long time threatened with injury through the attempts made by legislature to establish a chair of Homœopathy, is at present freed from that disturbing element, and with an able corps of professors is in full tide of prosperity. The Detroit Medical College, with the ample facilities for clinical instruction which its location affords, and fully equipped with an able and earnest faculty, attracts a large class of students, and takes a foremost place among the medical colleges of the west.

Of all institutions in the State for the relief of suffering humanity, the asylum for the insane is the most important, and every physician throughout the State who has had patients sent there for treatment, must have felt that it was under the management of a master hand. A suggestion, made by a member of the board of management, Dr. Pitcher, that the Society appoint a delegation to visit the asylum and report at our next annual meeting, is worthy of the attention of the Society.

The question of the treatment of the incurable insane is one demanding the attention of the Society. It is painful to contemplate the results inevitable under the present system, in which these unfortunates are placed in the care of persons utterly ignorant of the proper manner of dealing with the insane.

In conclusion he said: "May your deliberations, gentlemen, add largely to the general stock of scientific knowledge and lead to an universal spirit of emulation amongst the profession throughout the State. Earnest men in any department of science at the present day, should be encouraged to step forward at an early period of life, and while advancing years demand respect, and accumulated experiences in our profession will always receive due homage, yet on the other hand it is wrong to reproach any young man for his youth. Some of the highest honors in literature, the sciences and the arts, as well as in our own profession, are now held by young men, and I would point to these facts to encourage and stimulate the young physicians who are members of this society. At your period of life, when full of vigor and enthusiasm for your profession, with mind and body capable of great endurance, labor cheerfully and hopefully, and your labors will not go unrewarded." The address was listened to with close attention, and heartily applauded at its close.

Dr. G. W. Topping, of Dewitt, then read a paper on the "Contagiousness of Typhoid Fever," which was referred to the Committee on Publication.

The Committee on Admission of Members presented the names of Drs. J. B. Hull, Lansing; J. F. Smiley, Okemas, and Ambrose Brown, Grand Ledge. All of whom were admitted by unanimous vote.

The annual report of the Treasurer, Dr. D. O. Farrand, was presented and accepted.

Dr. Ranney, on behalf of the Committee on Publication, reported that 300 copies of the minutes of the last annual meeting had been printed, of which 150 remained on hand.

Dr. D. O. Farrand, of Detroit, submitted a report on "Urinary Calculi," in which he recounted a number of interesting cases and operations. Accepted and referred to the Committee on Publication.

Dr. W. H. De Camp, of Grand Rapids, read a report on "Blood Letting, and its Substitutes." He had corresponded with physicians throughout the country, and found that the use of the various substitutes for blood letting in the treatment of inflammations, etc., was unanimously advocated. He maintained that the types of disease had not changed, but that the views of the profession in regard to the benefit of bleeding had undergone a complete revolution during the past generation. The paper elicited some discussion, and on motion of Dr. Brodie, the subject was made a special order for next day at 10 A. M.

A report on "Dysentery" was presented on behalf of Dr. Chas. G. Southworth, of Monroe, and on motion of Dr. Ranney, was referred to Dr. Brodie for examination, with instructions to report in the morning.

Dr. Brodie read a paper on the proper manner of providing for the insane. He strongly condemned the system of keeping insane people and paupers in the same rooms—the common practice in country poor houses. In concluding he offered a resolution, asking the Governor to recommend in his next message a suitable appropriation to provide for the erection, at Kalamazoo, of a building as an asylum for the incurable insane who are now kept in the county poor houses, to be under the charge of the Superintendent of the present asylum. On motion of Dr. Topping, the report was accepted and the resolution adopted.

On motion of Dr. Brodie, the Secretary was instructed to forward a copy of the resolutions to his Excellency Governor H. P. Baldwin.

A voluminous report on "Excisions of the Hip Joint" was presented on behalf of Dr. Lyster, of Detroit, and referred to a committee, to be reported upon on the morrow.

Dr. H. B. Shank, of Lansing, then read an interesting paper on the so-called magnetic or electrical springs that have been of late attracting so much attention in our State. Dr. Shank agreed with Dr. Kedzie, of Lansing, in attributing the magnetic phenomena, observed in connection with certain wells, simply to the inductive effect of terrestrial magnetism on the iron tubing through which the water is brought to the surface. The water itself, he affirms, possesses no magnetic properties whatever, and indeed it is impossible to conceive, from anything we know of the nature of magnetism, how it could be in any sense "magnetic." Of the value of these waters, however, as curative agents, he spoke in the highest terms, citing several remarkable cases which had come under his own observation. Among the diseases in which it had been advantageously employed were mentioned rheumatism, neuralgia, ophthalmia, chronic diarrhœa, dispepsia, Bright's disease, and paralysis. The paper was accepted and the Society adjourned.

PROCEEDINGS OF THE SECOND DAY.

The meeting was called to order by the President, at 8 o'clock. The reports of special committees being in order, Dr. Jerome reported in regard to Dr. Lyster's paper on excisions of the hip joint, and Dr. Brodie in regard to that of Dr. Southworth on dysentery. Referred, with instructions, to Committee on Publication.

The report of Dr. Jenks, made yesterday on the registration of physicians, was referred to a special committee, consisting of Drs. Brodie, Topping and McGraw.

Dr. Jas. F. Noyes read an able and exhaustive paper on sympathetic ophthalmia, its pathology, symptomatology and treatment.

On motion of Dr. Jerome, the following resolution was adopted:

Resolved, That the very able and interesting paper just read by Dr. Noyes be referred to the Committee on Publication, with instructions to publish the same in the transactions of the Society.

Dr. Jenks read a paper, entitled "Menstruation without Ovulation," in which he related a remarkable case in which menstruation had continued after the complete removal of both ovaries, and discussed the relationship existing between the functions of menstruation and of ovulation. In cases where the ovaries have never been developed, or where they have been removed previous to the period of puberty, the menses do not make their appearance. In the normal condition of things, the menstrual flux is coincident with the discharge of the matured ovum, at least after the age of puberty. The regular periodicity of the molimen menstruale shows it to be dependent in some way upon nervous influence. After the catamenial discharge has been once established, so as to become a habit of the system, the immediate influence of the ovaries is not longer required. We can find no other case on record either to substantiate or to invalidate these views, which are therefore thrown out with a hope of eliciting more facts bearing on this interesting question. Referred to Committee on Publication.

On recommendation of the Committee on Membership, Drs. Orville Marshall, of Union; S. L. Jones, of Deerfield, and R. C.

Kedzie, of the State Agricultural College, were admitted to membership of the Society, on the usual conditions.

Dr. Hitchcock, of Kalamazoo, presented a paper describing an operation for the removal of a large fibrous nasal polypus, performed upon Geo. H. Adams, of Otsego, by Dr. Milton Chase. Referred to Committee on Publication.

The hour of 10 o'clock having arrived, the President announced as the special order of business the discussion of Dr. De Camp's paper on blood letting.

Dr. Noyes said that the tendency of the times was against blood letting, and in favor of the use of other measures.

Dr. Jerome could not agree with Dr. De Camp in ascribing the discontinuance of the use of the lancet to the discovery of new remedial measures alone; he believed that the human constitution had undergone a change. Fevers, etc., had assumed a different type.

Dr. Brodie was opposed to the publication of the paper as read, arguing that its tendency would be to encourage opposition to the regular practice.

After some further discussion, participated in by Drs. Jerome, Parmenter and De Camp, it was moved by Dr. Brodie that the paper be referred to the Committee on Publication, and that Dr. De Camp be requested to modify certain parts of it. Adopted.

Dr. H. O. Walker, of Detroit, read a paper on "Strictures of the Urethra."

Dr. Ranney read a paper detailing the history of a "Case of Hydrocephalus," which terminated fatally at the age of two years and four months.

Dr. T. A. McGraw, of Detroit, read an interesting paper on "Amputations," giving some of the results of his army experience. These papers were all referred to the Committee on Publication.

Several papers were also presented which, for lack of time, were referred to the Committee without being read, as follows: By Dr. J. M. Bigelow, of Detroit, on "Krameriaceæ;" by Dr. W. Parmenter, of Vermontville, on "Puerperal Convulsions;" by Dr. H. B. Baker, of Wenona, on "Biology, or the Philosophy of Life." Miscellaneous business being in order, Dr. Brodie offered the following resolution:

Resolved, That the Committee on Publication be and is hereby requested to ask of the Legislature to print at the public expense the transactions of this Society, the number of copies to be under their judgment. Adopted.

Dr. Jerome offered the following resolution:

Resolved, That the Committee on Publication be and is hereby instructed to exercise a careful discretion relative to the publication of all papers referred to them, and publish such, and so much only, as in their judgment will advance the interest of the profession and reflect credit upon this body, especially only such papers as the Society directs by vote shall be published. Adopted.

Dr. Jenks offered the following resolution:

Resolved, That a committee, consisting of Dr. J. H. Jerome, chairman; Dr. H. S. Cheever, and Dr. H. B. Shank, be appointed, whose duty it shall be to report at the next meeting of this Society upon the treatment of the insane of the State, and the practicability and mode of managing County Insane Hospitals. Adopted.

Dr. Shank offered the following resolution:

Whereas, The practice of holding the annual meetings of this Society at different points in the State tends to elicit a more general interest among the medical men of the State, thereby increasing our numbers and influence in the whole State; and,

Whereas, The Kalamazoo County Society has extended to this Society an invitation to hold their next annual meeting at Kalamazoo; therefore,

Resolved, That this Society accept the invitation. Adopted.

Dr. Hitchcock offered the following resolution, which, after considerable discussion, was adopted:

Resolved, That this Society will hereafter annually select two committees, of three members each, to visit the medical schools of this State, and especially to attend the examination of candidates for the degree of Doctor of Medicine, and faithfully to report to this Society upon the condition of the schools and the thoroughness of their teaching and examinations.

Dr. Brodie moved that the annual dues be increased to two dollars. Carried.

Dr. Brodie offered the following resolution:

Resolved, That the Committee on Publication, if not able to influence the Legislature to provide for publication, be authorized to assess the members of the Society not less than $2, to be sent by mail. Adopted.

Dr. Brodie gave notice that, at the next annual meeting, he should move to amend the constitution of the Society so as to require as a qualification for membership that the applicant be a member of some local medical society, provided that such a society exists in his county.

Dr. J. F. Noyes, of Detroit, presented a report of some cases of operation requiring the readjustment of the muscle in certain forms of strabismus, which was read by its title and referred to the Committee on Publication. The operation is adapted particularly to the removal of the deformity occasioned by a paralytic squint, and is, he believes, a novel one in the State, no cases of the sort up to the present time having appeared in print.

Dr. Jenks offered the following, which was adopted:

Resolved, That a committee, consisting of Drs. Hitchcock, Duffield and Kedzie is hereby appointed, whose duty it shall be to examine into the nature of the various so-called medical springs and wells of the State, and the medical properties and uses of each, and report on the same at the next meeting of this Society.

On motion of Dr. De Camp, Dr. D. O. Farrand, of Detroit, was appointed a committee of one to report at the next meeting upon the cases of ovariotomy which have been performed in this State. Dr. De Camp moved that the thanks of the Society be tendered to Dr. Geo. E. Ranney for the entertainment given to its members at his residence last evening. Carried.

A resolution was offered and adopted that the President's address be requested for publication.

Dr. Brodie, on behalf of the special committee to which was referred the report of Dr. Jenks on the registration of physicians, recommended that Dr. A. B. Lyons, of Detroit, be appointed chairman of a committee for this object, empowered to appoint sub-committees of one in each county, and that he be authorized to draw on the Treasurer for the amount of expenses for circulars and postage. Adopted.

The Society proceeded to the election of officers for the coming year, with the following result:

President—Dr. J. H. Bartholomew, of Lansing.

Vice-Presidents—Drs. Wm. Brodie, Detroit; Moses Porter, Kalamazoo; Wm. Parmenter, Vermontville; and Barnes, of Ionia.

Recording Secretary—Dr. Geo. E. Ranney, of Lansing.

Treasurer—Dr. D. O. Farrand, of Detroit.

Corresponding Secretary—Dr. Geo. W. Topping, of DeWitt.

A committee, consisting of Drs. Jerome and Jenks, was appointed to conduct the President elect to the chair. In taking the chair, Dr. Bartholomew briefly thanked the convention for the honor conferred upon him.

On motion of Dr. Jerome, thanks were tendered the retiring officers.

The President was authorized to appoint standing committees and persons to read papers at the next meeting of the Society at a future time, and notify those appointed.

Dr. J. M. Bigelow, of Detroit, was appointed a delegate to the Ohio State Medical Convention, and Dr. H. O. Hitchcock, of Kalamazoo, to the New York Convention.

After some discussion it was agreed that the next annual meeting should be held at Kalamazoo, during the second week in June, 1871.

In the afternoon the members of the Society, in accordance with the invitation previously extended to them, visited the State Agricultural College, the Reform School, and the Lansing mineral well, and expressed themselves as very much gratified with their entire visit.

Selections.

SPINAL IRRITATION.

By William A. Hammond, M. D., Professor of Diseases of the Mind and Nervous System.

[Concluded from page 280.]

ECCENTRIC SYMPTOMS.—By far the most important and noticeable symptoms of spinal irritation are to be found in distant parts of the body. These vary in their character and seat, according to the part of the spinal cord affected. Following the example of the Griffins, I shall consider these symptoms as they depend upon irritation of the several regions of the cord with which they are connected.

a. The Cervical Region.—Of the cases upon which this paper is based, in fifteen the irritation existed in the cervical region only, of the spinal cord; in thirty-two, the cervical tenderness was conjoined with dorsal tenderness, and in ten with tenderness of the whole spine. Taking the uncomplicated cases as presenting the clearest features, the following would appear to be the more prominent symptoms of cervical spinal irritation.

Vertigo was an accompaniment in seven cases, and *headache* in nine; *noises in the ears* in five, and *disturbances of vision* in four. *Fullness* and a *sense of constriction* across the forehead were complained of in several cases, as was also tenderness of the scalp. In addition, the mind was more or less affected in every case, and in six the aberration was of such a character as almost to amount to insanity. In one of these, a married lady, aged thirty, there were several paroxysms of maniacal excitement every day; and in another, that of a young lady, aged twenty-three, so furious were the exacerbations, that, for fear she would injure herself or others, she had to be restrained by two strong nurses, who held her while the fits lasted. The predominant type, however, was melancholia.

Sleep was deranged in every case, generally in the form of insomnia, though in three cases the tendency to somnolence was excessive. In every case the dreams were of an unpleasant character; in two there was nightmare, and in one somnambulism.

Neuralgic pains were present in twelve of the fifteen cases. If the upper part of the cervical region was the seat of the irritation, these pains were experienced in the scalp and face; if the lower, they were seated in the neck, the shoulders, upper part of the chest, and the upper extremities. Sometimes the pain was of a dull, burning character, and was then generally seated in the muscles of the nucha. Muscular effort always increased the suffering. In accordance with Teale's experience, it several times occurred that the neuralgia was intermittent, the paroxysms coming on about sundown and lasting through the night. In none of these cases was there anæsthesia.

Motility was interfered with in twelve cases. Sometimes there were *fibrillary twitchings*; in three cases there were *clonic spasms* of the muscles of the face and neck; in two, *general chorea;* in two, *contractions* of the flexors of the arm on one side, so that the elbow was rigidly bent; in two the contractions were in the flexors of the hands, and in four, of the fingers. In one case there was *complete loss of power* over the hand; in one, *aphonia;* and in one, almost constant *hiccough* while the patient was awake.

Nausea was present more or less in seven cases, and in one part of everything taken into the stomach was almost immediately rejected. *Pain* in the stomach was not met with in any case.

b. The Dorsal Region.—I found the dorsal region of the spine tender in eighty-eight cases. In thirty-two of these it was conjoined with cervical, in twelve with lumbar tenderness, and in ten it was affected together with the whole spine, leaving thirty-four uncomplicated cases.

The most prominent symptoms in these cases were connected with the viscera, the stomach being the organ commonly involved. Thus *gastralgia* was present in every case, *nausea* and *vomiting* in seven cases, *pyrosis* in three, *gastric flatulence* in thirty-two, and *acidity*, as evidenced by heartburn, in twenty-one.

Next in order came the heart. There were *palpitations* in eighteen cases, *fits of oppression*, during which the heart beat with irregularity as regarded force and rhythm, in seven cases, and *attacks of syncope* in five.

There was *difficulty of breathing* in fourteen cases, and *cough* in eleven.

Intercostal neuralgia existed in five, and *inframammary pain* in twenty cases.

There were no muscular spasms, contractions or paralysis.

In the thirty-two cases in which the dorsal tenderness was conjoined with cervical tenderness, the symptoms characteristic of each region were more or less intermingled. In two cases there was *epilepsy*, and in three *chorea paralytica*.

c. The Lumbar Region.—This portion of the spine exhibited tenderness in thirty-one cases. In twelve of these it was accompanied by dorsal tenderness, in ten the whole spine was affected, and in nine the tenderness was confined to the lumbar region alone. Of these latter all were characterized by *neuralgic pains* in the lower extremities, and in three of them there were similar pains in the muscles of the back and abdomen. In four there was *spasm of the neck of the bladder*, accompanied by severe pain, and causing great difficulty of urinating, in one there was *incontinence of urine*, in two *pain in the uterus and ovaries*, and in one *neuralgia of the rectum.*

Motility was affected in seven cases. In three of these there were strong *tonic contractions* of the muscles of the lower extremities, and in four *paralysis*. In all of these there were occasional *clonic spasms* simulating chorea. Of the twelve cases in which there was also dorsal tenderness, the symptoms were in general those characteristic of spinal irritation of both regions.

The whole spine was tender in ten cases, and so extensive was the hyperæsthesia that it was scarcely possible to press upon the most limited spot without producing pain. Of these cases the most prominent symptom in one was *epilepsy*, in one *paralysis*, sometimes of the upper and sometimes of the lower extremities, and in three *contractions* of the limbs. *Neuralgic pains* either in the scalp, face, neck, chest, upper extremities, abdomen, and lower extremities, were present in every case, according to the part most severely affected for the time being. The heart was disordered in two cases, the stomach in nine, in three there was *difficulty of swallowing*, from alternating paralysis, and spasm of the muscles of the larynx, and in one *aphonia*.

CAUSES.

The most powerful predisposing cause is *sex*. Of the one hundred and twelve cases, ninety-three were females. Age is likewise influential in determining to the disorder. Of eighty-three cases in which I have recorded the age, fifty-one were between fifteen and twenty-five, thirteen between twenty-five and thirty-five, ten under fifteen, and nine over thirty-five. The period of life between fifteen and twenty-five is therefore that at which spinal irritation is most apt to occur.

Hereditary influence was ascertained to exist in eighteen cases.

The exciting cause of spinal irritation is not always easy to ascertain. In seventeen of eighty-three cases I could not, by the most careful inquiry, find any circumstance likely to have given it origin. In fifteen it was manifestly produced by blows, falls, or strains, in seven it was obviously caused by sexual excesses, and in two by onanism. In three there was reason to ascribe it to anxiety and grief, in two to excessive mental exertion, in ten to insufficient physical exercise, in twelve to innutritious and insufficient food, in three to over-indulgence in alcoholic liquors, and in one to the use of opium. In the remaining eleven cases it followed exhausting diseases, such as typhoid, scarlet, and intermittent fever, dysentery, and diphtheria, and was probably directly the result of their influence.

In general terms, it may be said that any cause capable of reducing the powers of the system, may produce spinal irritation.

PATHOLOGY.

I have already stated it as my opinion that the essential condition of spinal irritation is anæmia of the cord. Other writers have ascribed it to inflammation, congestion, hysteria, and numerous other factors. The reasons which have induced men to arrive at this conclusion are briefly as follows: Owing to the fact that spinal irritation is not *per se* a fatal disease, we rarely have the opportunity to verify any views we may hold in regard to its pathology. In the few cases in which *post-mortem* examinations were made nothing abnormal was found, a circumstance, however, far more compatible with the idea I have expressed than with any other.

1. It is a well recognized fact that irritation is often a result of a deficient supply or a poor quality of blood. Thus headaches are frequently caused by cerebral anæmia, and are promptly relieved by increasing the amount of blood in the cerebral blood-

vessels. Irritability of the mind is also a constant accompaniment. A feebly-nourished stomach rejects food, and is the seat of pain. An anæmic heart beats with great rapidity, weak muscles are affected with tremor, and an exhausted generative system is brought into a state of unnatural erethism by the slightest kind of excitation. Analogy, therefore, supports the theory I have suggested.

2. The diagnosis of diseases of the spinal cord has become so perfect that we are able to distinguish congestion, meningitis, myelitis, softening, tumors, etc., by their symptoms and by the means of research at our command. We see, therefore, that the morbid phenomena which result from such conditions are not such as we now class under the head of spinal irritation. This division of the subject will be more fully considered under the head of diagnosis.

3. I have repeatedly ascertained, by actual experience, that those agents which are known to lessen the amount of blood in the spinal vessels invariably increase the severity of the symptoms due to spinal irritation, while they are as effectually lessened in intensity by remedies which tend to produce spinal hyperæmia.

4. The general condition of patients, the subjects of spinal irritation, is always below par, and the exciting causes are all such as tend to the production of asthenia.

These circumstances, I think, go very far toward confirming the view I have expressed, that in spinal irritation the vessels of the cord contain less blood, and that this fluid is inferior in quality, than when the organ is in a healthy condition. Now that the function of the sympathetic nerve, as regards its action in regulating the calibre of the blood-vessels, is so satisfactorily proven, we can partially understand how local congestions and anæmias may be superinduced. It is probable, therefore, that the original difficulty in many cases of spinal irritation resides in the sympathetic system, and the intimate anatomical relations existing between the two nervous centres is strongly in favor of this suggestion.

On the other hand, many of the phenomena of spinal irritation point strongly to the secondary involvement of the sympathetic system. It is thus that the visceral disturbances which form such prominent features are mainly to be explained.

The pathology of several others of the more striking symptoms of spinal irritation has been a subject of frequent discussion, but at the present day presents no difficulties. Thus the excitation of pain in the tissues to which the cutaneous nerves are distributed results from the law that irritation at a nervous centre induces pain at the points in which the nerves arising from that centre end. Each compound spinal nerve sends a twig to the skin contiguous to it, and these twigs terminate immediately over the spinous processes. Now, whenever an irritation is thus transmitted to the periphery, it may be reflected back to the centre whence it came, by local irritations. Thus a patient is suffering from chronic inflammation of the spinal cord, and in consequence has pain and muscular spasms in his lower extremities. An irritation applied directly to the cord increases the pain and spasms; an irritation applied to the lower extremities augments the pain in the cord, and may induce pain and spasms in distant parts of the body. Hence it is that pressure on the skin over the spinous processes not only causes cutaneous pain, but also gives rise to spinal pain, and neuralgic sensations in those nerves which come from the irritated part of the cord.

The pain existing in the cord is aggravated by percussion or muscular action. The spinal cord, it is true, is enclosed in a strong and thick bony canal, which, however, is entirely filled by its contents. A blow, therefore, on the exterior of the column causes a vibration, which is propagated through the bony structure to the cord and its membranes. If this blow be very violent, the concussion may be such as to inflict irreparable damage on the cord. When any portion of the cord is in a state of irritation, a very light blow upon the spinous processes, over the disordered part, will cause severe pain, or notably add to that already present. The vertebral column is flexible, and therefore muscular action may, by producing deviations from the ordinary line followed, occasion pressure, and, in the abnormal condition of the cord, excite pain.

DIAGNOSIS.

Recollecting that no case is to be regarded as one of spinal irritation which is not characterized by spinal tenderness, we have our diagnostic inquiries limited to the distinguishing of spinal irritation from other spinal affections. It is certainly true that the distinction has often been overlooked, and that at times there is a real difficulty in forming a correct judgment. Nevertheless, by carefully estimating all the circumstances, permanent errors of diagnosis are not likely to occur.

There are three diseases of the spinal cord which may in their earlier stages be confounded with simple spinal irritation. These are chronic myelitis, meningitis, and congestion. As the treatment of these affections is in many respects the exact reverse of that proper for spinal irritation, and as they are of far more serious character, it is important to make as early and as correct a discrimination as possible.

In both spinal irritation and myelitis there is tenderness over some part of the vertebral column, which tenderness is increased by pressure, but this tenderness is never due to hyperæsthesia of the skin, whereas in spinal irritation it often is.

In spinal irritation there is never, so far as my experience goes, anæthesia, whereas this is a constant accompaniment of myelitis.

The contractions which take place in some cases of spinal irritation are painless, while those due to myelitis are attended with great suffering.

In myelitis there is a sensation as if a tight cord were tied around the body at the upper limit of the paralysis, a sensation which is always absent in spinal irritation. It is true that Mr. Teale has described several cases which he classed as spinal irritation and in which the sensation of constriction was present, but careful examination of the histories leaves scarcely a doubt that these were really cases of myelitis.

The bladder is never paralyzed in spinal irritation, whereas, in myelitis, it generally is, if the inflammation be located in the lower dorsal region of the cord. The same is true of the sphincter ani. Myelitis is always productive of paralysis, and there is always more or less atrophy of the paralyzed muscles. Spinal irritation seldom gives rise to paralysis, which, when it does result, is always incomplete, and is never productive of atrophy.

The progress of myelitis is generally, unless arrested by appropriate treatment, toward a worse condition, whereas no such tendency is manifested by spinal irritation.

From spinal meningitis, spinal irritation is distinguished by the circumstances that in the former disease there are constant painful spasms of the muscles of the back, pain in the cord, and no spinal tenderness increased by pressure.

From congestion of the spinal cord and its membranes, spinal irritation is sufficiently distinguished by the facts that there is little or no pain in the cord in the first named affection, and no spinal tenderness. In congestion, likewise, the paralysis and other symptoms are always worse after the patient has been lying down, while in spinal irritation the recumbent position always alleviates the condition.

Another means which in doubtful cases will invariably lead to a correct diagnosis is afforded by the known effects of certain medicines. Thus spinal irritation is, as I have several times ascertained, made worse by the administration of ergot, while each one of the other diseases I have named is alleviated. The reverse is true of strychnia, which in all cases aggravates the symptoms of myelitis, meningitis, or congestion, while it is an efficient means of cure in spinal irritation. A hypodermic injection of the thirtieth of a grain is sufficient to settle the matter in cases where the diagnosis is of difficult formation.

The flatulence, eructations, and vomiting, are very symptomatic of spinal irritation, while they are rarely phenomena of either of the other affections.

One other disease is liable to be confounded with spinal irritation, and that is angular curvature, in which there is spinal tenderness increased by pressure. The facts, however, that strumous disease of the vertebræ generally occurs in children, that the scrofulous diathesis is always present, that an angular prominence can be detected by careful examination, that the paralysis progressively becomes more profound, that the constitutional effects are more severe, are sufficient, even in doubtful cases, to guide to a correct diagnosis.

PROGNOSIS.

The prognosis in cases of spinal irritation is generally favorable. In fact, so far as my experience extends, I have never seen a case which entirely resisted treatment, and very few in which a cure was not ultimately effected. When remedies suitable for the difficulty do not prove successful, it is because the patient does not steadfastly persevere in their use.

Of the one hundred and twelve cases forming the basis of this memoir, ninety-eight were thoroughly cured, seven were lost sight of soon after treatment was commenced, but were materially improved, and seven were relieved for the time being, but continued to have relapses.

TREATMENT.

The principles of treatment applicable to spinal irritation are four:

1. To remove the cause.
2. To improve the general tone of the system.
3. To increase the amount of blood in the spinal cord, and improve the nutrition of this organ.
4. To set up a counter-irritant action in the vicinity of the disordered region of the cord.

In regard to the first indication, I have nothing special to say. The cause once ascertained, common sense would dictate its removal as speedily and as effectually as possible, by the proper means according to its character.

The second indication is to be met by tonics, such as quinine and iron, and especially stimulants judiciously administered. I am as well convinced of the general applicability of alcohol in some form, in the treatment of spinal irritation, as I am of any thing. Whisky, brandy, and rum, are to be preferred on account of their less liability to disagree with the stomach, and as containing a greater per centage of alcohol than vinous or malt liquors. Among the tonics the preparations of zinc are valuable, and I think the oxide is to be preferred. Cod liver oil is also of great service.

The third indication is easily fulfilled by strychnia, phosphorus, phosphoric acid, and opium. The two first named remedies may be very satisfactorily combined in a pill containing half a grain of extract of nux vomica and the tenth of a grain of the phosphide of zinc, which may be given three times a day. Strychnia may also be given by solution of the sulphate in dilute phosphoric acid, and in doses of about the thirty-second of a grain to half a drachm of the acid. The beneficial effects of these remedies are perceived in a few days. Opium is especially useful in those cases in which there are contractions of the limbs, and here its action is, of course, not solely that of an agent increasing the amount of blood in the cord. I prefer to give it either in the form of suppositories, composed each of half a grain of the aqueous extract and a sufficient quantity of the butter of cacao, or by hypodermic injection of morphia. I have frequently seen contractions, which had persisted with obstinacy for several weeks, relax in a few minutes under the influence of opium thus administered.

The application of hot water to the spine is also an admirable adjuvant. It should be used as hot as can be borne. Nothing is better for the purpose than Dr. Chapman's india-rubber bags.

But there is a remedy which we can employ either to contract or enlarge the diameter of the blood-vessels, and which, when used with the latter object in view, is more efficacious in removing spinal irritation than any other with which I am acquainted, and that is the direct galvanic current. The method I follow in cases of spinal irritation is the application of the negative pole at some point above the seat of the pain, and the positive at another, an equal distance below. An ascending current is thus brought to bear upon the cord, and this powerfully conduces to the dilatation of the blood-vessels and the improvement of the nutrition of the cord. The current should not be passed at any one *séance* for more than fifteen minutes, and no one application should last longer than three or four minutes. For the relief of the spinal tenderness the negative pole should be applied directly to the painful part, and the positive to a point distant laterally from it a few inches.

In inflammation or congestion of the cord or its meninges, the method of application is directly the reverse of this.

The fourth indication is one of great importance, and, when properly carried into effect, a cure will often result in slight cases without any other means of treatment being employed. The *rationale* of the action of counter-irritants in this and similar derangements is by no means clearly understood. It is a question which I do not, however, propose to discuss. Of counter-irritants my experience leads me decidedly to the employment of blisters in preference to any others. They should be applied to the skin, immediately over the painful part of the spine, and should be renewed as often as may be necessary. Tartar-emetic ointment, though useful, is more painful and I think not so efficacious as blisters. Dry cups are more admissible, and almost always do good. They should be applied on each side of the spinous processes for an extent of four or five inches above and below the painful spot. Leeches, or any other means for the abstraction of blood, are, according to my experience, always prejudicial.

Besides these therapeutical means, there are others of a more strictly hygienic character, which cannot be overlooked. Thus the food should be of a highly nutritious character, moderate physical exercise should be taken, and as much time as possible should be spent in the open air.

Patients almost always feel more comfortable in the recumbent position than any other, because thereby the blood is allowed to settle in the spinal vessels. They should not therefore be prevented lying down during the greater part of the day, but at the same time they should be encouraged to take exercise, and especially so when there is any loss of power in the lower extremities. The induced or Faradaic current is almost always of service, when applied to the affected muscles, and the direct is of great efficacy when passed through neuralgic nervous trunks.

In illustration of the views inculcated in this memoir, I append the following details of cases:

CASE I. *Irritation of the Cervical Region of the Spinal Cord.*—Mrs. J. S. consulted me, May 7, 1868, for what she had been informed was a cerebral disorder. The patient was thirty-eight years of age, had had five children, and had always enjoyed good health till two years previously, when she had been thrown from her carriage. She was not stunned or otherwise seriously injured. Soon after the accident she noticed a rumbling noise in one ear, and in a few days subsequently the other ear became similarly affected. About the same time there were flashes of light before the eyes, and a dull, heavy pain in this point of the head. Vertigo was also frequently present. There was insomnia, and when she did sleep she was very apt to be attacked with nightmare.

These symptoms continued to annoy her for several months, without, however, compelling her to seek for medical advice, until at last she had a seizure which was certainly epileptic in its character. This was followed by disturbance of vision, and intense neuralgia of the fifth pair of nerves. She now placed herself under the charge of a physician in a neighboring city, where she was then residing, who diagnosed a tumor of the brain, and gave an unfavorable opinion as to the ultimate result. He, however, advised the use of iodide of potassium. She took this in large doses faithfully for three months—during which period she had two more epileptic attacks—without perceiving any benefit, and then she went to Europe. While there she consulted a number of physicians and surgeons of eminence, all of whom gave a very guarded prognosis. By the advice of several of these she took the bromide of potassium, with at first, some advantage, but this was eventually lost, and her symptoms became as severe as before. She had several epileptic paroxysms during the four months she was taking the bromide. Finally, she traveled through Germany and Italy, and, still obtaining no relief, returned home. I saw her a few days after her arrival. She was then suffering from facial neuralgia, excessive tenderness of the scalp, so that she could not have her hair brushed without enduring great pain, obscureness of vision, pain in the eyeballs, redness of the conjunctivæ, vertigo almost constantly, great mental irritability, amounting at times to positive insanity; wakefulness, nightmare, and contraction of the fingers, the nails being strongly pressed against the palm of the hand.

Ophthalmoscopic examination showed dilatation of the retinal vessels, arterial and venous pulsation, and congestion of the optic discs of both eyes. The pupils of both eyes were contracted.

Perhaps I should not have suspected any spinal difficulty, if she had not herself called my attention to a pain which she said she constantly felt between the shoulders. I therefore examined the upper part of the spine very carefully, and found deep-seated pain developed by percussion over the seventh cervical vertebra, and great hyperæsthesia of the skin over the eighth. Her symptoms were not those in the least indicative of congestion of the cord or its membranes, of meningitis, or myelitis, and the apparent severity of the cerebral symptoms, and the general good condition of her mind and sensorial and motor functions, were so incompatible, that I could not, upon reflection, bring myself to the belief that she was affected with any organic disease of the brain. My inquiries and examinations all led me to the conclusion that she was laboring under spinal irritation of the lower cervical region.

I therefore prescribed for her five drops of the phosphorated oil three times a day, applied a blister to the painful spot, and daily passed the direct galvanic current through the cord, by applying the negative pole to the fifth cervical, and the positive to the sixth dorsal. My object was, not only to improve the nutrition of the cord, but also, by irritation of the sympathetic, to contract the vessels of the brain. Budge and Waller had shown several years previously, that, when that portion of the spinal cord situated between the seventh cervical and sixth dorsal vertebræ is acted upon by the galvanic current, the pupils are dilated. Now, dilatation of the pupils is produced by excitation of the sympathetic, and excitation of the sympathetic within the limits mentioned likewise causes contraction of the vessels of the brain, as can readily be seen by ophthalmoscopic examination while the current is passing.

Under the influence of this treatment the amendment was rapid, and at the end of three months she was entirely cured. It was necessary, however, to apply eleven blisters.

CASE II. *Irritation of the Cervical Region of the Cord.*—M. S., a gentleman of sedentary habits, consulted me, August, 1867, for intense headache and facial neuralgia, with which he had suffered for several months. The disease had come on gradually, and, although now never entirely absent, was paroxysmal in its character, being more severe at night than through the day. The external pain followed the course of the fifth pair of nerves through all its branches; the internal was fixed in the posterior part of the head, and was evidently due to cerebral anæmia, as it was relieved by stimulants, and by holding the head in a dependent position. Vertigo was frequently present, and the disposition to sleep was excessive, though, owing to the pain, could not be indulged in for more than a few minutes at a time. Nausea was occasionally a symptom, but never to the extent of being followed by vomiting.

On examining the spine of this gentleman, I found tenderness over the fourth and seventh cervical vertebræ. Two blisters were at once applied, and Aitken's syrup of the hypophosphate of iron, quinine, and strychnia, administered. From the first, improvement was manifested, and in less than a month the cure was complete.

CASE III. *Irritation of the Dorsal Region of the Spinal Cord.*—Mrs. J. B., aged twenty-four, consulted me, March, 1868, for obstinate vomiting, and neuralgic pains in the left breast. She was thin, pale, and anæmic, and had suffered for over a year. She also complained of a .dull, aching pain in the middle of the back, which was increased by even moderate physical exercise. The vomiting took place regularly after every meal, and even water was at once thrown up. She was under the impression that the disorder was the result of exposure for several hours to very severe cold while in an open boat.

Recognizing, at once, the fact that the main difficulty lay in the cord, I carefully examined the whole spine, and found excessive tenderness over the spinous processes of the sixth, seventh, and eighth dorsal vertebræ. There was also deep-seated spinal pain developed by percussion.

I ordered the application of a blister, and the internal use of small quantities, frequently repeated, of milk-punch (one ounce of brandy to three of milk). The first wineglassful was at once rejected, and so was a tablespoonful which she took half an hour subsequently. I then reduced the quantity to a teaspoonful every half hour. This was retained, and was the first nutriment of any kind which, for nearly eleven months, had not been rejected wholly or in part.

The next day I found that the blister had drawn well, and that the nausea and vomiting were greatly diminished, as were likewise the neuralgic pains. A teaspoonful of the following mixture was then directed to be taken three times a day immediately after meals: ℞. Strychnia sulph. gr. j, ferri pyrophosph, quiniæ sulph. aa. ʒ ss, acid phosph. dil., syrupus zingiberis aa. ℥ ij. M. ft. mist. The milk-punch was still continued, but, in treble the dose, less frequently given.

Gradually all the symptoms decreased in violence, and at the end of two weeks she was enabled to retain a moderate quantity of food at each meal. Any excess was still, however, followed by vomiting. She had increased five pounds in weight, and was greatly improved in personal appearance.

In two months she had gained twenty-one pounds, and was as well as she had ever been in her life. The spinal tenderness had entirely disappeared; seven blisters were applied in all.

CASE IV. *Irritation of the Dorsal Region of the Spinal Cord.*—Mrs. W. had for more than three years suffered from spasmodic movements of the upper extremities, not distinguishable from those of true chorea, which occasionally were followed by contractions of the flexors of the wrists and fingers. There were also infra-mammary pain, eructations, and vomiting. When she came under my care, June 22, 1869, she was reduced to almost a skeleton, and was suffering, in addition to the symptoms above mentioned, from acute pain in the back. This pain she informed me had not been ordinarily very severe, but was, nevertheless, constantly present. On examination I found tenderness over the first, second, and third dorsal vertebræ. I at once applied the constant galvanic current in the manner already described, and continued it for five minutes, with the effect of mitigating the pain in the spine and the nausea. The ensuing day I repeated the application, and in addition prescribed the mixture given in Case III. She retained it on her stomach, as she did the food which she ate that day. Brandy in ounce doses was given with her lunch and dinner. The galvanism was continued daily for eighteen days, at the end of which time she was free from pain, from the spasms, and from the vomiting. Her appearance was immensely improved, and she had increased seven pounds in weight. The galvanism was now discontinued, but the strychnia mixture and the brandy were persevered with for over a month longer. She was then well.

CASE V. *Irritation of the Lumbar Region of the Spinal Cord.*—E. T., an unmarried lady, aged twenty-nine, consulted me, August, 1869, for paralysis of the lower extremities, attended with spinal tenderness and abdominal pains. She had been treated for inflammation of the spinal cord, had been cupped, leeched, and had had an issue made over the seat of the pain.

When I first saw her she was unable to walk, having been in this condition for several months. As she sat in her chair, she could readily move her legs in any desired direction, but to bear her weight upon them was an utter impossibility. There was no alteration of sensibility. Her general appearance was not anamic, nor was she in the least degree hysterical. Upon careful examination, I was unable to find any reason to induce the belief that she was laboring under spinal congestion, meningitis, or myelitis, or that there was softening of, or pressure upon, the cord. I, however, discovered great tenderness over the first and second lumbar vertebræ, and found that strong pressure in this region induced deep-seated spinal pain and sharp neuralgic sensations along the course of the crural nerves.

Regarding the case as one of pure spinal irritation, I applied the constant galvanic current to the back every alternate day, and administered the following prescription: ℞. Zinci phosphidi, grs. iij, ext. nucis vom. grs. xv. M. ft. in pil. no. xxx. Dose, one three times a day. I likewise directed the application, to the painful part of the spine, of flannel, wrung out of spirits of turpentine, to be continued daily till redness and decided smarting were produced. A full and nutritious diet with ale was enjoined. Under this treatment she improved so rapidly in every respect that in twenty-three days she was able to walk with a cane, and in a few days more than a month was well, being in as good health, according to her own report, as she had ever enjoyed in her life.

I have full notes of a number of other interesting cases, but this paper has already been extended to so great a length, that I must defer their relation to some other time. Meanwhile, I am not without the hope that I may have succeeded in presenting some interesting details to the members of the Society.—*Journal of Psychological Medicine.*

A REVIEW OF RECENT LITERATURE UPON THE CLIMATIC TREATMENT OF CONSUMPTION.

There is no need to say a word in order to persuade English medical men either of the pressing importance of the subject of climatic treatment in phthisis, or of the unsatisfactory state in which our knowledge of this matter still remains. Light seems, however, to be breaking from all sides at once upon the mystery of this disease. The readers of this journal are doubtless acquainted, from other sources, with the remarkable discoveries recently made with regard to the pathology of so-called "phthisis;" and we have ourselves briefly analyzed a paper of Dr. H. Weber on the new climatic treatment of the disease. We propose, now, to show how extensive and weighty is the existing literature of the high-level consumption treatment; and we would even hope that our impartial criticisms may assist in indicating the essentials of a climatic treatment of phthisis which will avoid some extremes, both on the one hand and on the other. But it may be said, at once, that the mass of evidence produced in the works now to be reviewed is far too great for us to question any longer that we have here the materials for a most important revolution in our ideas as to the appropriate treatment of at least a large class of consumptive patients; and we regret that among some of the older practitioners there has been manifested a rather unreasonable reluctance to give the new facts a fair hearing.

When one remembers the stereotyped ideas as to the kind of climate suitable to the treatment of consumption with which the whole profession was impregnated until quite within the last few years, one is tempted to exclaim, that there is no real basis of science for our hygienic doctrines at all, or such violent swings of the pendulum would not be possible. *Cœlum non animum mutant* is a saying difficult to apply to climatologists whose faith has deserted the moist, muggy, winterless lowlands that used to be in fashion, and fled to their precise opposite—the cold, dry, and keen atmosphere of the Andine valleys, or the Engadine. We suspect that the public find this transition passing strange, and that the more cynical of them mock at the doctors and their mad ways. Yet, the violence of the change is more apparent than real, and it will be well to take care that enthusiasm for the new ideas does not blind us to the fact. One of the first tasks which a reviewer of this subject ought to set himself is the repairing a great injustice which has been done to our countryman, the late Dr. Archibald Smith. Dr. H. Weber has already pointed out the priority of this gentleman's observations on high-level health-resorts in consumption; but we have a special motive for recurring to the subject. Dr. Brehmer, whose treatise, interesting in many respects, is disfigured by a certain lack of courtesy and respect for distinguished fellow-laborers, speaks of himself as the inventor of the new doctrine and practice. It is probable that Dr. Brehmer never heard of Archibald Smith, but it is the more necessary to insist that the observations made by the latter, so long ago as 1840, on the hygienic effects of residence in the Andine valleys, 8,000 to 10,000 feet above the seaboard, were the starting-point of the doctrines which Brehmer claims as his own. And the importance of Smith's researches rests on this, that they are an eye-witness's faithful record of the results of an ancient treatment long established in Peru, and based on empiric observations on so enormous a scale as to leave no room for doubt in the mind of any intelligent resident in the country. The Peruvians possess unrivaled opportunities for testing the value of high-level residences in phthisis; for on the one hand the disease is very common in their lowlands, and, on the other, the slopes of the Andes afford a variety of sheltered valleys at great elevations, in which the invalid can obtain all the effects of their dry mountain air, without too much wind. The results, it would appear, are most striking, not merely as regards the improvement of general health, but specially as to the liability to *hæmorrhage.* The latter observation, in particular, is a severe rebuke to the theorizing way in which the climatology of phthisis has been mainly dealt with in Europe, since it is exactly opposed to the generally received ideas; and it is of such importance, that we hasten to add that the testimony of all the recent observers of the effects of high-level health-resorts unanimously confirms it.

In a later paper, Smith states that in the whole of Peru, with its vast range of climate, phthisis is nowhere more prevalent than "in the mild and equable temperature of the capital and its immediate environs," while it is little known in the mountain regions except as imported from the coast. "In the warmer valleys of the centre of the Andes the health of the consumptive invalid is not restored. In hæmoptysis, which is the usual forerunner of consumption in Lima, the invalids themselves rarely trust to medicine, but at once order the mules * * * and they seek at the first notice of the disease to insure a full reparation of the injured respiratory organs, by an adequate continuance in the well-known and appropriated regions of convalescence." When the disease has further advanced and has produced perceptible deviation from the normal murmur, with almost always obscurity of sound on percussion under either the right or left clavicle, "no Lima junta of experienced native or well-acclimatized English physicians would for a moment hesitate to order the patient to the Sierra. They would deem this transfer of climate as the only security for the patient." In the same paper, Smith states that he has seen much good result, even in the advanced stages of phthisis, from removal to elevated regions; but he does not expect a perfect cure in such cases. "It must be clearly understood, therefore," he says, "that I claim the curative effects of the Andine climate, on the broadest ground of facts and experience, in favor of the early stages only, and not the more advanced periods of consumption, where there is, correctly speaking, no sound lung to rescue."

Among the places approved in Peru for the treatment of phthisis, Archibald Smith mentions Harawag and Canta on the route from Lima to Pasco; "but Canta above all, on this route, is allowed to be the most desirable, being about twenty-five leagues from Lima, and at an elevation of 10,000 feet." He further names "on the Zarma road from Lima," and also on the Pacific slope of the Cordilleras, Mantanea and San Mateo; the former (according to M'Lean) 8,026, the latter 10,984 feet high. On the opposite slope of the Cordilleras, Zarma and Janja are the places recommended by the Lima physicians, and the latter (above 10,000 feet) is allowed to have the preference.

The position of the question, as brought out by A. Smith, is still more strikingly shown in another paper. "In further evidence of the importance attached to the climate of Janja by the physicians, Government, and inhabitants of Lima, and the coasts of Peru in general, I shall here briefly refer to the 'Estadistica General,' or general statistics of the capital, as published by Dr. A. Fuentes, of Lima, in 1858. He says on this subject, 'Janja has always been the refuge of the consumptive people, and a lengthened experience has demonstrated the favorable results of its climate. Nevertheless,' he observes, 'many are disappointed of the benefits they expected from Janja, because they do not leave Lima for that district until in the last stage of pulmonary decay; or because they do not remain in Janja the time required by nature to ensure a perfect recovery; or because, after visiting this sanitarium, instead of following a methodic life, suited to their state of disease, they abuse the advantages of the climate by the very help of the relief they derive from it, and commit excesses which can only lead to their premature death.' But the important result, notwithstanding such instances of irregularity, is, as told by Dr. Fuentes, that the proportion between the *cured* and the total number of patients, in all stages of pulmonary consumption, sent to Janja, amounts to $79\frac{42}{88}$ per cent. And in view of so important a general result to the patients from the capital, where the Indian soldier is singularly prone to phthisis—a disease almost unknown in his native hills—the Government have of late years, in 1860, initiated a military hospital for consumptive patients from the coast, and capital in particular, in the vale of Janja." ("Climate of the Swiss Alps and Peruvian Andes compared:" *Dublin Quarterly Journal*, May, 1866."

What has been shown us for Peru by the researches of Smith has been proved also for Mexico by Jourdanet, who informed the world that a prolonged residence on the plateau of Mexico exercises not only a prophylactic but also a curative influence on phthisis. ("La Mexique et l'Amérique tropicale," etc. Paris, 1864, pp. 204 *et seq.*) And Guilbert has done the same for Bolivia, as well as for Peru ("De la Phthisie pulmonaire dans ses Rapports avec l'Altitude et avec les Races en Pérou et en Bolivie." Paris, 1862), and by Scrivener for the mountains of Cordova ("Sanitary Character of the Andine Heights," being a reprint, in private circulation, from an article by Dr. Scrivener in the *Revista de Buenos Ayres*).

Such and so strong being the evidence as far as regards the influence of elevated health-resorts in Central and South America, it is immensely interesting to observe the positive evidence of a confirmatory nature which has been brought forward of late years from the experience of mountain climates in Europe. Lombard, H. Weber, and Spengler all assure us that the natives of the Engadine and the Davos, when attacked by consumption during a residence abroad, are cured by a timely return to their mountain homes. And it would be easy to adduce a great deal more testimony to the same effect if we desired now to finally adjudicate upon the question—which is the best kind of climate for phthisical patients? At present, however, we only wish to point attention to the extraordinary apathy of the greater part of the medical profession to one of the strongest *primâ facie* cases, at least, that was ever adduced for a new method of treatment. We shall have more to say on this point hereafter; at present we shall only dwell on the following, which are the most obvious of the reasons why the high-level climates are not even experimented upon by the great mass of practitioners.

1. *A mild and equable climate* is widely regarded, from tradition, and from some of the superficial features of the disease, as the best for consumption. This idea has firmly laid hold of our minds; and yet, where are the warm and equable climates to which consumption is a stranger? The fact is, rather, that warm and equable climates, especially if they are at the same time moist, are the greatest hotbeds of consumption; not only is it a frequent disease in such places, but it is much more rapidly fatal than in colder climates with great changes of temperature.

2. *Cold, i.e.* low temperature, is by many persons considered as predisposing to consumption: but there are no facts to support the view that *cold in itself*, without moisture and wind, is a cause of consumptive diseases; we possess, on the contrary, much evidence that a cold and pure air counteracts the tendency to phthisis.

3. *Great variations of temperature*, as they generally exist in mountain regions, have the reputation of being specially deleterious to consumptive persons. But the fact is, explain it as we may, that most of the climates in which phthisis does not exist are characterized by great ranges of temperature: this is true not only of the mountain climates proper, but of the steppes of Orenburg; and Archibald Smith adduces overwhelming evidence of the same fact from his experience of various localities in Peru.

4. The *diminished atmospheric pressure* in high elevations has always been popularly believed to predispose to hæmoptysis, and even Lombard supports this view (" Les Climats de Montagnes," 2d edit. 1858). Nor is it at all surprising that such an opinion should have become current, considering the remarkable sensations which are experienced by the inhabitants of low countries on first ascending into mountain air. But if we investigate the reliable medical evidence, we find it altogether the other way, as we have already remarked.

5. It is the general opinion that *open-air exercise* is essential for the cure of phthisis, and that the rigor of the colder months in mountain districts prevents it from being safely taken, and thus leads to confinement in close rooms, under penalty of catarrhal and inflammatory attacks if the precaution be neglected. Among the authors whose works are placed at the head of this article, Brehmer seems as yet not to have kept his patients in his elevated health-resort during the winter, though he contemplates

doing so in future; but H. Weber has already sent a considerable number to the Alps during winter, and Spengler has for several years been in constant attendance on consumptive patients at Davos: from both these authors we learn that these patients have been in the open air almost every day; that they have taken drives in sledges on the coldest winter days—the heat in the sun being very considerable; that they have also been able on many days to sit for hours in balconies on the sunny side of the house; and that they *have rarely felt cold, either indoors or out.* Most of H. Weber's patients have even slept with a window partly open during the coldest nights, and he mentions that those of his patients who had spent some winters in warmer places (Egypt, Algiers, the Riviera) and some in colder elevated regions, had been invariably more free from catarrhal and other fresh affections in the cold than in the warmer climates. On the question of exercise strictly so called, *i.e.* muscular exertion, we shall have some remarks to make at a later stage.

6. A far better grounded objection to the high-level health-resorts for consumption than any yet mentioned is the *want of accommodation* and of proper food at these places, especially during winter. The winter accommadation in the Engadine and at Davos is already much improved, however; and the food, though it might be better, is tolerable; moreover, if the demand were increased, good winter establishments would soon be set up in several parts of the Swiss, Italian, and French Alps, as also in Germany; and the social wants of the invalid would also thus be satisfied; though we would protest against the craving for the dissipation of parties, etc., and for attending divine service in cold and draughty churches. For the inhabitants of America an abundance of high-level health-resorts can be found among the Andine heights of Peru, Bolivia, New Granada, and the Argentine Confederation, and on the plateau of Mexico. For Indians there must be numbers of suitable localities in the Himalaya range. And besides these localities we may mention the city of Erzeroum, in Asia Minor, and the table-lands of South Africa and of Abyssinia.

Thus far, then, it would appear that the objections urged against the adoption of high-level health-resorts for consumption are more theoretical than practical, and that they offer no serious obstacle which might not, probably, be entirely overcome. It is now our duty to inquire a little into the *modus operandi* of the curative influence; and this, to say the truth, is not very easily explained.

Brehmer, it is true, has a complete theory, which may be thus summed up: In persons predisposed to consumption there is a *habitus phthisicus;* this is characterised by a long chest and long lung, with a small flaccid heart. This small heart is unable to supply the abnormally large lungs with sufficiént blood; the lungs are thus ill-nourished, half-starved; low kinds of inflammation (catarrhal pneumonia) are apt to occur in them; the products of these inflammations are frequently not absorbed, but undergo cheesy transformation and lead to the usual changes of phthisis. The physiological effect of elevated regions is an increased frequency and strength of the heart's contractions, increased tissue changes, an improved nutrition of the muscular systems of the heart and of the lungs; and thus we possess in them an antidote against consumption.

Now, on examining this theory, we remark: 1. The preexistence of the phthisical conformation requires stricter proofs. The natives of the Peruvian Andes, who, according to Smith, became consumptive while serving in the army at Lima and other towns of the coast, have probably been originally well-formed; the inhabitants of Davos, who had become consumptive while residing in different towns in Europe, had, as Spengler assures us, well-built chests before they left their elevated valley. The two first cases reported by H. Weber were in perfect health when they left their mountain homes, but the condition of their lungs and hearts, and their entire nutrition, had probably changed after a prolonged stay under unfavorable influences in London. Is not, one may ask, in these and many other cases, the *habitus phthisicus* the effect of a general change in the nutrition, and of the altered respiratory action? and does not this change also give rise to catarrhal inflammations and their products?

2. It is true that an increased frequency of the heart's contractions is one of the physiological effects of elevated regions, at all events in most cases and at first; but Brehmer has not proved that it continues after the constitution has become somewhat accustomed to the new climate, and our inquiries lead us to doubt this. From good evidence we are inclined to infer that the inhabitants of mountain valleys do not have a more frequent pulse than those of lower regions. Brehmer ascribes the increased frequency to diminished pressure of the air, and says that his own pulse, even in the same locality, always quickens with a lowered barometrical pressure. Can we form an inference from one case? If the diminished pressure of the air had much to do with the cure of consumption in elevated regions, then one would think that a certain rate of elevation, corresponding to a certain diminution of atmospheric pressure, would be sufficient in all localities; but this is by no means the case. Brehmer himself agrees on this point with Lombard, H. Weber, Küchenmeister, and others, that the elevation necessary, in different regions, to produce a certain immunity, varies greatly; that in the neighborhood of the equator it requires over 10,000 feet, while in the middle of Germany 1,500 feet seem to be enough. If we look at the map we find, in those regions where the elevation necessary is very great, high mountains with vegetation, and sometimes

cultivation ascending to a great altitude; while in those regions where 1,500 feet is sufficient for immunity there are no mountains exceeding 4,000 feet in height, and the fertility of the soil and the habitations of men cease at a much lower level than that. Without committing ourselves to a theory, it is not unreasonable to fancy that the air at such relative elevations is freer from foreign admixtures of organic and inorganic nature; and in some health-resorts this advantage would be more prominent during the cold months, when the ground is entirely covered with snow, a circumstance which would partly explain why most of the patients in the Engadine feel themselves better in winter than in summer. Possibly the remarkable fact discovered by Bowditch and by Buchanan bears a similar explanation, and favors the view just expressed. As the air in relatively high localities is less charged with products of decomposition, so probably the drying of the soil diminishes the amount of decomposition going on in the surface soil, and diminishes in this way the amount of the products of decomposition contained in the air of houses and places situated on such soil; and it is not unlikely that an air comparatively free from foreign—especially organic—impurity does not favor the occurrence of those catarrhal and inflammatory processes which so often lead to phthisis. Upon the theory thus suggested, we might understand why some not very elevated health-resorts possess immunity from phthisis.

Another physiological effect attributed by Brehmer and Spengler to the air of elevated regions is *increase of tissue change.* Without denying this we must agree with H. Weber that no satisfactory evidence has, so far, been given to the fact. Nobody, to our knowledge, has shown that more carbonic acid is exhaled, or more nitrogenous matters excreted; no one has even proved that the respirations are deeper or more frequent, or that more air is inhaled. It is most desirable that accurate investigations should be made on these points; as yet there are none in existence. If no larger quantity of air were inhaled in high regions, then, of course, the quantity of oxygen inhaled would be less than in low countries with a denser atmosphere; and the question would arise, whether high elevations may not act by diminishing the work of the diseased lungs. We may mention here, that some patients who have resided in high situations, for their health, have assured their medical attendants that after the first week the appetite for food diminished, and remained lower, although they had no distaste for their meals; and that in spite of diminished ingestion they gained weight.

And now, having stated as succinctly as we could the state of our information about the new climatic treatment, we shall conclude this article with a brief restrospect of the progress made, on the whole, towards a clear idea of the best way of treating consumption. We promised, in commencing this article, to do our best to avoid any undue bias towards an exclusive method of treatment; and in fact any such exclusiveness would be, in our opinion, most unfortunate.

1. It seems difficult to doubt any longer that the circumstances, whatever they are, which prevail in certain mountain valleys, offer a more complete immunity from phthisis to the natives, and a better chance of cure to phthisical visitors, than is afforded by any other mere climatic influence whatever. It also appears very doubtful whether the influence really is climatic merely, and quite certain that it, at any rate, is not regularly proportionate to the mere degree of elevation of the district.

2. It is, nevertheless, impossible to suppose that all the benefits which have been attributed to warm southern climates were imaginary; on the contrary, there is scarcely a practitioner who has not seen the greatest benefits accrue from sending consumptive patients to climates which, compared with their own, may be called, on the whole, decidedly mild and equable. Note here, however, two points. With very few exceptions those climates which have been popularly associated with this idea are, in reality, both much less mild and much less equable than the majority either of patients or even of medical men are accustomed to think, until they have had personal experience. And secondly, those who are in the habit of analysing results with care have often noted this singular fact—that patients who have returned from wintering at such places, where they had expected to be bathed in the luxury of the *ideal* "Italian" climate, complaining bitterly that they have been starved with cold, and really given evidence in some particulars of apparent increase of catarrhal mischief for the time, do nevertheless appear, after a short interval, to show the unmistakable influence of their winter sojourn, unpleasant though it has proved to them.

3. A more important practical observation than any other, except that of the influence of elevated health-resorts, is the discovery of the extraordinary value of *long sea-voyages*, which, during the last few years, has been increasingly impressing itself on the medical mind. It is, perhaps, not too much to say, that we are now certain the voyage itself was the only really beneficial agent in the otherwise mistaken and disastrous practice of sending consumptives to Madeira.

4. The kind of alimentation and medication which alone are useful, is now pretty well settled; the only question which remains open being the degree of development that may be given to the use of certain metallic tonics, especially arsenic, which seems to offer the good results of iron *plus* an unknown, but probably very valuable, influence on the nervous centres.

5. The question of the kind and amount of physical exercise to be enjoined or permitted offers serious difficulties; but it also, we think, promises to shed indirect light on the general climatic

question. It is, on the one hand, known that great benefits often result from the mere influence of the free use of open-air exercise, independent of temperature or the other features of climate. It is, on the other hand, loudly protested by some of the most experienced practitioners, that nothing more frequently ruins a patient's chances of recovery than the incurrence of muscular fatigue. Now let us turn to the instance of long ship-voyages, a mode of treatment which is quite indisputably successful in a great number of cases—does it not strike the reader forcibly, on reflection, that one most important circumstance of ship-board life is its *lazy, effortless monotony*, giving nearly perfect *rest*, if one may say so, to both bodily and mental muscles? Now, the other grand feature of life on a ship is the *constant and copious inhalation of air free from organic impurity* and charged only with matters (especially, perhaps, chloride of sodium) which are directly beneficial to nutrition and general health. Does is not seem as if there were, after all, a common measure, discernible if not completely definable, to all the various plans of hygienic treatment for consumption which of late years have commanded any wide support from medical men? It appears to us that we may tabulate side by side the elements of equal success from either of two modes of treatment:

1	2
Prolonged residence in a high but fairly sheltered mountain valley.	A prolonged ocean voyage.
Free carriage exercise, little or no walking.	Free exposure on deck, only gentle and slight walking exercise.
With, of course, all proper precautions about warm clothing, and the avoidance of draughts indoors.	Same precautions about sufficient clothing, and avoidance of draughts, getting chilled with wet clothes, etc.

If this view be ultimately justified by larger experience, it will then, we think, be obvious that by either of these two plans we offer, in a regular and necessary manner, all those advantages which are only partially and in an uncertain and fluctuating way afforded by the fashionable health-resorts of which the Riviera may be taken as the type; and that there is no evidence that the latter really possess special advantages of their own. The copious inhalation of an air compararatively free from organic impurities very probably accounts for five-sixths of all the benefits received at such places; and to the pleasing novelty of a foreign residence we should be inclined to attribute the rest.—*The Practitioner.*

Communications.

RELATIONS OF THE PHYSICIAN TO HIS PATIENTS—CHARGE OF JUDGE SUTHERLAND.

[An apology is due to the committee who forwarded to us the following interesting communication for the unreasonable delay in its publication. We make no excuses, but will simply say that the article was *not* crowded out to make room for more valuable matter.—EDS.]

SAGINAW CIRCUIT COURT—*Bernhard Hesse, Appellee, vs. Charles Knippel, Appellant.*

The above entitled cause was an action brought for the recovery of $32, the amount of plaintiff's account for medical service rendered in behalf of defendant's wife, commencing December 30, 1868, and terminating January 29, 1869, at which time the patient died.

It was a case of confinement, in which the defendant, for pecuniary reasons, employed a midwife, and immediately after the birth of the child and expulsion of the placenta, an alarming hemorrhage supervened; whereupon the defendant called upon Dr. Hesse, a reputable practitioner of medicine, in East Saginaw, for its suppression. The doctor, on his arrival, half an hour subsequent to her delivery, promptly applied himself to the discharge of his professional duties, and in the use of ordinary remedies stopped the hemorrhage, which had been unusually severe, involving, according to the evidence, the loss of some three quarts of blood. The doctor called next day, found his patient comfortable, and apparently much better. He requested the defendant, if his (plaintiff's) services were needed in future, to let him know it.

On the 10th day of January, the twelfth day after confinement, the doctor was requested to see her again. He found her weak, with a continuance of the lochial discharge, and prescribed tonic and astringent medicines, with enema for the bowels, which general course was continued until the 14th, when she appeared somewhat improved.

The doctor, having occasion to be gone from home a few days, requested the defendant, if necessary before his return, to call Dr. Lathrop, which he did on the 16th. Dr. L. made the necessary prescription, in his judgment, and the next day Dr. Hesse, having returned, called in company with him. She was suffering some pain, with general uneasiness, and had a somewhat offensive discharge, which prompted the doctors to make a vaginal examination, resulting in the removal of some coagula, similar to that which had preceded it on the 13th and 14th. No very alarming symptoms were manifest at this time, and, indeed, none particularly so until the 21st or 22d, when she fell off rapidly until death supervened, as above, preceded by a general anemic condition, and partial paralysis toward the close of life.

On the trial before the justice, as well as Circuit Court, the prescriptions sent to the druggist by Dr. H., as also the other recommendations to midwife and nurse, were all produced in evidence, showing a rather more than ordinary degree of attentiveness, and an unexceptional practice from the commencement to the conclusion of the case. The jury in justice's court rendered judgment for the amount of the doctor's account, and in utter defiance of the exceeding baldness of the defense, the case was carried to the Circuit, only to be confirmed, occupying four or five days in the examination, at an expense to the tax-payers of the county of over $300, besides services of judge, clerk and stenographer, and to the parties a much larger sum for counsel, witnesses, etc.

Hon. J. G. Sutherland:

SIR—We, the undersigned physicians and surgeons of the Saginaws, believing that the legal relationship existing between members of our profession and their patrons are not sufficiently well understood to save parties, not only from medical, but also from *legal* empiricism, are of the opinion that the charge of the court to the jury, in the recent case of Bernhard Hesse, Appellee, vs. Charles Knippel, Appellant, if brought to the general notice, would serve a valuable purpose, not only in the prevention of vexatious and costly litigation, but also to preserve a better relation between patients and practitioners.

Therefore, we most respectfully solicit a copy of your charge in the above entitled cause for publication.

Respectfully yours,

J. H. JEROME,
GEO. A. LATHROP.
C. B. FRASER,
D. S. HALL,
BENJ. B. ROSS,
L. W. BLISS.

Saginaw City, February 21, 1870.

CHARGE.

Gentlemen of the Jury:

This case has occupied the attention of the court for four days, a time disproportioned to the amount in dollars and cents involved in the controversy. The money claimed, however, is of trifling concern compared with some questions which the demand of the money has introduced for your consideration. The defense set up makes it necessary to decide questions of great moment to the public, as well as to the plaintiff.

He was employed as a physician by the defendant, to treat his wife immediately after childbirth. He treated her, and is entitled to recover therefor $32, unless it appears from the testimony that he does not deserve any compensation, by reason of failing to perform his professional duty. The defendant defends solely on the ground that the plaintiff did not perform his services, as a physician, with due care, diligence and skill, and that by reason of such carelessness and want of skill, his services were of no value. To decide whether the plaintiff failed in his duty, it is important that the jury have as definite a rule as can be given, in respect to what is required.

A physician is not a warrantor or insurer of a case, and he is not to be tried by the result of his remedies. His only contract and duty is to treat the case with reasonable diligence and skill. (22 Penn. St., 261; 3 Wis., 416.) He is bound not only to use such skill as he has, but to have and employ a reasonable degree of it. (31 Barb., 534.) While the law will not countenance quackery, it does not require the most thorough education nor the largest experience. He who professes to adhere to a particular school of practice, must come up, at least, to its average standard, and must be judged by its tests, and in the light of the present day. (Shear & Red. Negl., pp. 490–2, secs. 435, 437.)

It is not claimed that the plaintiff did not possess the requisite skill, but only that he did not use it. What is reasonable diligence and care in a particular case, depends on its circumstances; on the occasion for exertion which these circumstances suggest, to avoid possible evils—depends on the serious character of those evils, if they are permitted to occur, and the imminence of the danger. A disease known to be rapid, or a condition known to be critical and dangerous, will require more instant and careful attention and application of remedies than one comparatively harmless, and only requiring good nursing. (Id., sec. 438.)

The common law has a peculiar regard for human life, and for this reason exacts a greater degree of care in respect to it than in relation to any mere matter of property. Accordingly, the law requires from all persons, including those who render gratuitous services, at least ordinary care for the safety of life; from those who render services for compensation, great care. (32 Barb., 657.) These are general principles; they may be stated more definitely in connection with particular cases.

A physician employed to take charge of a woman in child-bed has two general duties to perform with care and diligence: first, to ascertain and keep informed, as far as practicable, of the condition of his patient, and secondly, to direct the administration of suitable remedies to promote recovery. The first duty, that of ascertaining the condition of the patient, is not an absolute duty, but a duty to use the means and methods for that purpose sanctioned by science and experience, as understood by well instructed practitioners of the same school, and to pursue the inquiry and examination with reasonable thoroughness. He is not answerable for the error of an enlightened judgment, but he cannot interpose his judgment contrary to that which is settled. He must apply without mistake what is settled in his profession; he cannot try experiments with his patients to their injury. (Shear & Red. Negl., sec. 440; 19 Rick., 333 ; 11 Cush., 397.)

We are reminded by the evidence, showing the great complexity of the human organism, that "we are fearfully and wonderfully made." Every present or threatened derangement is not at once manifest; certain conditions may be readily ascertained; others must be inferred—arrived at by reasoning; judgment must be exercised. What are safe conditions of a woman just delivered of a child have been stated with unanimity and precision by the experts. There is required, first, the complete removal of the placenta, with the usual membranous attachments; and, secondly, prompt measures to prevent all excessive loss of blood. It is agreed by all the witnesses, that at the time of the plaintiff's first visit, he promptly arrested the flow of blood; but it is insisted on the defense that there was a subsequent loss, impoverishment or poisoning of blood, in consequence of the first requisite not being duly attended to.

When the physician has an opportunity to examine the placenta discharged, it is conceded that, by inspection, he can decide with certainty whether it is intact, or any part detached so that further examination is required; and it is agreed on all hands that this means of information is very important. If this is neglected, or is impracticable, other satisfactory tests may be resorted to.

The jury will have to decide whether the plaintiff was, in this part of his duties, reasonably diligent. Was he prevented from examining the placenta by its removal beyond reach before his arrival, or was he so informed in answer to his inquiry for it? If so, did he diligently pursue his investigations otherwise, by acting on the information from the midwife, and the results produced and the conditions ascertained by abdominal manipulation. If he pressed his inquiries and his examinations far enough to form a reliable judgment, or such as thorough educated physicians would ordinarily, under like circumstances, form and act upon, he cannot be held responsible for coming to an erroneous conclusion, though other tests might have been used and were not.

The same rule of duty applies to his subsequent oversight of the case. And his treatment of the patient otherwise, in all the stages of illness, including the application of remedies, must be characterized by reasonable care and competent skill, tried by the average standard of educated practitioners.

If the patient died from the effects of a loss of blood at the time of delivery, and afterward; or the failure of medicines, or the omission of medicines, to invigorate her, still, if the plaintiff used reasonable care and diligence, considering the nature of the case, and the general state of medical knowledge and experience, he performed his duty, notwithstanding the result. So, should the jury find that in some parts of the plaintiff's treatment there was a want of diligence or skill, but the prejudicial effect was slight and temporary, and was not the obstacle to the recovery of the patient, and did not contribute to her death, it may be disregarded. It is a self-evident proposition that negligence which does no injury cannot be the basis of an action, nor detract from the value of otherwise meritorious services.

On the other hand, should the jury find that the defendant's wife was in a condition, from time to time, which the plaintiff could have ascertained by reasonable diligence and skill, and he failed to ascertain her condition, or, after having learned her condition, if it appears that, by a diligent exercise of reasonable skill in the use of remedies well known to educated physicians, he could have saved the patient, and by failing in this due administration of remedies, his treatment was unsuccessful, he cannot recover.

Editorial.

OWING to the extent of space occupied by the report of meeting of the State Medical Society, our editorial pages are materially curtailed, and a portion of the matter for this form is hence postponed to another month.

CORRECTION.—By some oversight an important point in Dr. Platt's article, in the *Review* for May, was omitted. The case was one of ascites, which extended over many months, and in which tapping was resorted to thirty-two times. The patient's health gradually improved, the rapidity of the accumulation lessened until it ceased, and at last accounts, some months since, the patient was enjoying perfect health.

WE notice that Dr. H. F. Lyster, of this city, has been elected a corresponding member of the Gynæcological Society of Boston.

REVIEWS AND NOTICES.

Renal Diseases; a Clinical Guide to their Diagnosis and Treatment. By W. R. Basham, M. D., Fellow of the Royal College of Physicians; senior physician to the Westminster Hospital, etc. With illustrations. Philadelphia: Henry C. Lea. 1870. Pp. 300. 12mo.

This monograph, the author tells us, was prepared expressly for the student and young practitioner, to facilitate the clinical study of the class of diseases of which it treats. The work is divided into three parts. Part I treats of inflammatory diseases of the kidney, including the inflammatory form of Bright's disease, discussing at length the causes which may induce them, and detailing their symptoms, modes of diagnosis and treatment. This portion of the work is elaborated with special care, and enriched with a number of illustrative cases. Part II is taken up with an account of that group of diseases designated, indiscriminately, chronic albminuria, or Bright's disease. The author describes four varieties, characterized by distinct structural lesions. The first results in the granular cirrhotic kidney, the second in the large granular and fatty kidney, the third in the waxy or lardaceous kidney, and the last in the atrophic, nodular, gouty kidney. He maintains the essential distinction in the pathology of the cirrhosed and the gouty kidney; the structural changes in the latter case he believes to be due to the deposite of urate of soda in the tubes and fibrous matrix of the organ.

Part III gives a succinct account of the characters of morbid urine, and the method to be employed in examining that excretion, together with the significance of the indications which present themselves in such examinations. The author confines himself to those qualities of the urine which are capable of furnishing indications of disease, and particularly of renal disturbance. He describes only those chemical processes which may be readily performed by every physician, requiring no special set of apparatus; and he condenses into the 90 pages devoted to this portion of his subject nearly all that the ordinary practitioner need to know of the analysis of urine.

DETROIT
Review of Medicine and Pharmacy.

VOL. V. AUGUST, 1870. No. 8.

CASE OF MRS. SARAH NORTHOVER.

By Z. C. McElroy, M. D., Zanesville, Ohio.

LESS on account of novelty than the lessons to be drawn from it, is Mrs. Northover's case reported. Occurrences more or less similar are, unhappily, too frequent to be remarkable for their rarity. But the lessons they teach are neglected, alike by the profession and people.

Mrs. Northover was a native of England, and settled on a farm near this city in 1849. Some three or four years after, her husband was accidentally killed.

My acquaintance with Mrs. Northover commenced about nineteen years since. The shock of her husband's death unsettled her health for several years; but at the time of a little incident, to be noticed presently, she had regained much of her former vigor. Residing on a farm with three daughters, she attended mainly to such duties as belong to the wife of a farmer. It will, perhaps, aid in understanding her case, to state further, that she was of small stature, quick and lively in her disposition, and a lady of considerable refinement.

In 1862, while feeding a calf she was raising, she received a butt from its head on her breast. A small lump raised immediately, with some swelling, redness and tenderness. What may be called the acute stage, or symptoms, subsided in a few days, but the lump remained, never free from tenderness, but not often during the next two or three years giving rise to much pain, and then only when it was struck against something, or leaned against, or pressed upon. But by 1866 she was seldom free from pain, and suffered more or less during the whole year, always worse in bad weather or when changes in the weather occurred suddenly.

In 1867 she consulted a leading practitioner of this city, who, she told me, informed her that the lump in her breast was a tumor now, but would soon turn to a cancer. At this time it was as large as a walnut, and was loose, so that it could be moved about under the skin, but the nipple was retracted, and the skin over the tumor was somewhat discolored. He proposed to cut it out; but as she had chills, prescribed some treatment for them, requesting her to call again in a few days, when she would be ready for an operation. But she left, little satisfied with the results of her interview, and resolved in her mind that she would not have it cut out at all. And she did not.

Sometime after this consultation, a neighbor lady, who was suffering from what was called a cancer, had, by means of an advertisement, learned that a Professor (!) Harvey, of Cincinnati, was a very successful cancer doctor, who did not use the knife, but eat them out with plasters. He was written to to come and see her, but he declined visiting her himself, but could send a student. Correspondence led to this student coming to see Mrs. Johnson, who had, perhaps fortunately for her, died just before his arrival. This student's name was Blood (Phœbus, what a name for a cancer doctor!), but very appropriate, as will soon be seen. He examined the cancer on Mrs. Johnson's dead body, and told her surviving family and the neighbors what wonders he would have done had she only lived long enough for him to see her.

The neighbors besieged Mrs. Northover to call this man Blood to treat her case. The chance, they urged, was so good; and then, he was so successful. The pressure was too strong to be resisted, and so Blood went to see Mrs. Northover. And a deed of blood he did for her, as the sequel will show. He asked her to pay him $50 before he would do anything, though a cure was absolutely certain. This, she thought, was beyond her means, and she declined; when he finally fell to $5, just to pay for the medicine. He left her two boxes of salve, one box sufficient to spread seven plasters, five inches in diameter, one to be applied every ten days. After the last plaster, she was to apply the other box of salve to heal up the place which would be left, like a sore, when the cancer had been eaten out; and it was depicted to her mind with its crab-like body, and long claws reaching out like the ribs of an umbrella. And he left her great pictures of the hideous beasts to look at and study, with a great many certificates from persons whom they—Blood and Harvey—had cured.

After the application of the first plaster, she never slept, only as she took opium. She lost her appetite, was soon confined to the house, and finally to bed. Blood was written to, and wrote in reply, demanding more money, and gave some trivial directions. He was written to again and again, but never replied. At the end of the seventy days, when the last of the seven plasters was taken off, her breast was gone! But no great cancer, with its hideous claws, ever made its appearance, but in the place of the breast there was a very large sore. She now, freed from the terrible suffering the plasters had caused her, gradually gained a little strength, and the sore eventually healed up. But the end of her trouble had not been reached. A new lump, or tumor, made its appearance under the new skin formed over the wound, grew rapidly, and she had pain all the time, night and day. She now turned her attention to patent medicines; applied Dr. Magnetism's Heal-everything Salve, Dr. Plumbum's celebrated Cure-all Ointment, all warranted to cure all kinds of cancers and sores; but it is hardly necessary to say that from them she never got a particle of relief. She next tried Dr. Malaria's Ague Medicine, which she thought "helped her some," as she now had chills much of the time. But the tumor continued to enlarge, and she suffered more than words could tell—using her own expression to me.

A local cancer doctor was now applied to, who, after he had examined her, told her he could do nothing for her.

In December, 1868, she heard of a Dr. Pagan (strange, yet significant names for cancer doctors—Pagan and Blood!), but for some cause was deterred from passing under his treatment, though a cure was unhesitatingly promised and guaranteed. He was of the traveling variety.

She now learned that a doctor by the name of Leohuer had just arrived in Zanesville, from Germany, who could cure any or all cancers, no matter how bad. He had brought all his medicines, too, from Germany, because they could not be had pure in this country. He was called to see her, made a favorable impression on her mind, and warranted a cure in six weeks. He gave her something she was to mix with egg and honey, and apply to the tumor with a feather. This gave her more pain than anything else she had yet applied to her breast. But, as the doctor had told her it would hurt her a good deal, she continued to apply it as she had been directed. During many days and nights, she told me, she had walked in a piece of woods near her dwelling, in order to prevent her family from hearing her groans or witnessing her agony. These applications were continued till May, 1869. Then Leohuer gave her some preparation of hartshorn to apply, and almost immediately her arm began to swell, became useless, and painful all the time. Leohuer, of his own accord, discontinued his services.

About the first of August, 1869, she consulted me for the first time in regard to her condition. I found, on examination, the place once occupied by her left mammary gland presenting a very irregular surface, wholly uncovered by cuticle, the skin around the sore very much puckered and drawn in; the axilla nearly, if not wholly solidified, the tissues having lost all elasticity, and the arm firmly bound down to the side, and nearly four times the size of that on the opposite side; the tissues were all dense, very dense, indeed almost cartilaginous. She was suffering much from her arm; it pained her all the time, was very tired, and she could not move the forearm without assistance. There was but little discharge of any kind from the place once occupied by her breast, nor was there much odor, nor any fungus growth, nor did it bleed easily. She was unable to sleep, eat but little, had a bad color, and was much emaciated.

Explaining to her that her only chance for recovery laid in removing the whole arm and the altered tissue, and even that was hardly worth counting, as the chances of her surviving the operation were largely against her, my prescription was merely palliative, viz., opium and belladona, in antagonizing proportions, to procure sleep; carbolic acid and glycerine, as a local application, and iodide of potassium, with more and better food internally. Her arm was elevated on cushions, or suspended by pulleys, to allow the water diffused in the meshes of the connective tissues to drain back into the general circulation. Requesting her to take the matter of an operation into serious consideration, and to have a consultation of her family in regard to it, she was left for that day. For a few days there was some improvement in her general health. She slept more, and eat more food, and, whenever she could bear it, the elevation of her arm diminished the œdema. But it was so painful, so tiresome, that she could not bear it long at a time. At the end of a week a consultation was had with an experienced surgeon, who advised against an operation, as there was, most likely, no base to which the covering integuments could adhere. And after consultation with her family, her own decision was against it, so that all ideas of operative surgical proceedings were abandoned. At the end of six weeks, during which she was seen mostly every day, my connection with her case ceased. But she was no better; on the contrary, had steadily lost ground nearly all the time.

My successor was a colored man, who pretended to cure everything by rubbing, and he was forced upon her by outside pressure. For a month she was rubbed daily, but with no improvement; on the contrary, her downward course was never stayed a moment.

On the 3d of December, 1869, a messenger, her son, summoned me to her bedside. She was found in a dying condition, and in the utmost agony; her arm was enormously distended. Half a grain of morphine, by hypodermic syringe, was given her, which soon relieved her pain. She thanked me again and again for the relief she experienced, but in an hour she had passed the invisible boundary between life and death.

No *post-mortem* was asked for or desired, either by myself or her family. For all scientific purposes it was sufficient to know that the normal forms of much of her tissue had been lost, and with the loss of normal form, function had ceased forever.

Such are, briefly, the facts of Mrs. Northover's case, obtained from her daughters, herself, or my own personal knowledge of the events from the time the calf surged its head against her bosom till her death.

Now, why did this lady die in the way she did? Was there any connection between the stroke from the calf's head on her breast and her death?

It will not do to say, in reply, that she died from her own stupidity and folly, or the interference of her neighbors and friends in employing still more ignorant and enterprising cancer doctors. For there will always be a supply of just such professional services as the people demand. If those who, from any cause, lose the forms of their tissues at any point in their bodies, have been educated to believe in specialists for special diseases, there will always be specialists to supply the demand.

Mrs. Northover, like the great mass of the people, had been educated in regard to disease and the healing art by the ordinary influences around her; partly by contact with living practitioners, myself among the number, on several occasions, but mainly by influences emanating directly or indirectly from the regular profession as a whole. If she had ever opened a doctor book, she found elaborate descriptions of many hundred separate, distinct and special entities of disease, so called; the symptoms of each minutely set forth, with the points of difference between diseases resembling each other carefully singled out. Popular doctor books do not differ much in the general impression they leave on the mind from those strictly professional, though in them technicalities are left out as far as possible, and they are very brief. Did Mrs. Northover look over the annual reports of specialists, who put on the local, or general markets of the world, proprietary or patent medicines for the cure of special diseases, or classes of diseases, her impressions in regard to disease generally, or its remedial management, would hardly have been changed. There is, in fact, a substantial agreement among regulars, specialists and quacks of all kinds, grades and degrees, that there are separate and special entities of disease, and that there are many separate and distinct diseases, and that certain treatment or certain modes of treatment "will knock them out of her" or "cure her." Then, again, they all agree to base their claims to her confidence, when she gets sick, to their experience and past success in the treatment of the particular disease she may have.

Specialties among the strictest of the regulars exists, and are recognized. In a community requiring the services of only half a dozen doctors, there will be one or more celebrated among their neighbors for their superior skill or success in obstetrics, surgery or general practice, or acute or chronic diseases, as well as for classes of diseases, as for women and children; or for fevers, or bowel complaints, or affections of the lungs. There is, in fact, to the non-professional observer so marked a general resemblance between regulars, specialists, and quacks of all kinds, it is no wonder the people fail to make any great distinction between them, and so award their patronage to all, but all the time seeking to find and patronize the most successful. And in the main there is no striking or remarkable difference in their results, for all are more or less successful.

For these reasons, Mrs. Northover passed her old acquaintances by when she sought professional treatment for what she believed to be a cancer in her breast. She told me she had never heard of my treating a cancer, for instance, and thought I would not know anything about them. She was guided by her desire to get well to seek the services of those who made the treatment of cancers a specialty, and made her believe, by their printed statements and certificates, that they were always successful. Nor was her disappointment and sufferings, in consequence of her decision to employ a regular cancer doctor, any greater or any less than thousands of others in the past, or other unnumbered thousands in the future. She discovered her mistake too late to retrace her steps. Nor will her failure, sufferings and death deter others from following in her footsteps, until regular medicine is reconstructed on a real scientific basis, and the people educated so that they can distinguish between those who do and those who do not deserve their confidence in the hour of affliction.

For these reasons, the skirts of the regular profession cannot be wholly cleared from a remote participation in Mrs. Northover's death. And these facts make it a good deal plainer why she died at the time, and under the circumstances, of her death. Her ideas of human physiology, pathology, therapeutics and philosophy, were, in this respect, false, that they did not give rise to mental conceptions which correctly represented to her mind the facts of life; and these she derived alike from regulars and specialists.

What were the facts of Mrs. Northover's case? She was 65 years of age at her death, and something over seven years elapsed between the injury she received from the calf and her demise. And as she had passed the perils which beset her sex at the crisis of her life, by almost ten years, and all the other perils which are necessarily encountered by all who reach her years, her expectations of life were, therefore, good.

The surging of the calf's head against her bosom seems a very simple affair, but, as events proved, was pregnant with important results to her.

How did the concussion of the calf's head cause the cancer in her breast? Cancer, like so many other ideals connected with organic life, both in the popular and professional mind, has no existence in fact, and is, therefore, a cheat and deceiver. Its designation was from some fancied resemblance between the sore and the large blood vessels sometimes, and always associated with those of rapid growth, and the crab. By the profession, to the present hour, lost forms in the tissues, called cancer, have been studied as the little boy studied what the baby did. And that was as follows: As a little son of one of my clients in the city was leaving home to visit his sister in a distant city, a few months since, his mother said to him: "Harvey, be sure and write to me and tell me what the baby does." His reply was prompt, and as follows: "Ma, the baby breathes, nurses, throws up, sleeps, cries, stares, laughs, and soils napkins." And, for a young observer, his report was truthful and business like; and, as confined to the more striking external phenomena, accurate and scientific. Had he studied other babies presenting a different catalogue of phenomena, as, for instance, one that did not stare; or another that did not cry, or another that did not laugh, he would soon have had a goodly list of babies of different species. Though the particular baby he did study was an object of peculiar interest to him, he did not say it was pretty or homely, big or little, smart or dull, or who it looked like. He simply complied with the request of his mother to tell her what the baby did. While he thus confined himself to his mother's instructions in his report, his method did not embrace the study of organic life, either scientifically or philosophically. Yet he studied the baby pretty much as the profession have studied the phenomena of organic life from the remotest antiquity. And from this method of study has arisen the popular and professional conclusions that there are several hundred separate and distinct entities of disease, and thirty or forty classes of therapeutic and remedial agents; and that there is a peculiar force evidenced in living beings, which is not manifested any where else in the universe—the vital.

Before medicine can become scientific, all these ideals must be wholly changed or abandoned. Organized life must be studied, as all other problems, on its facts, rejecting all speculations, suppositions, assumptions, dogmas or conjectures. And that which appals most, in carrying this into effect, is, that the great bulk of the accumulated experiences of the fathers, for twenty-five centuries, will have to be swept away. In so far as they may relate or refer to the conservation of force, the chemical transformations, or circulation of matter, and the development or evolution of organic forms, they will be retained. Much of what remains must be remorselessly swept into the great waste basket of the past.

The surge of the calf's head against Mrs. N.'s bosom, reduced to its simplest element, is mechanical motion. Omitting the tracery of force backward through the calf, from the moment the motion of its head was arrested by Mrs. N.'s bosom what became of it? And the train of phenomena it set in motion in her body may very properly, and perhaps profitably, occupy a brief time, because they are intimately connected with the reply to the question, Why did Mrs. Northover die, when she did and as she did? The motion of the calf's head was communicated to the molecular structure of a small portion of one of her now idle lactéal glands, and the motion was at a velocity which resulted in breaking down a portion of its molecular structure, just as a fall of her whole body through half a hundred feet of space, would have broken up so much of her organic forms as, in all probability, to cause immediate death. The motion communicated to the small spot of the organic form of her breast was dispersed as heat into the surrounding atmosphere, not to be either lost or remain idle, but to resume activity immediately in the general operations of organic or inorganic nature around her. As the molecular form was broken up by mechanical motion, some of the material of the changed form was rendered unfit for the further purposes of organic life, and must be removed from the body. Capillary vessels or blood tubes were ruptured or broken, that is, their forms were lost, and a further escape of liquor sanguinis occurs; the result, enlargement or swelling. The material thus suddenly started on its downward course must be removed, or find exit from the body, which necessitates further chemical changes; the result, evolution of heat, increased sensibility, and actual pain. But these results are not confined to her breast, her whole body is the theatre of increased chemical transformations in the interest of both repair and waste, but preponderating in the interest of waste. And this train of chemical phenomena is what is called inflammation—scarcely less of a bugaboo in the professional than the popular mind—which, viewed from the standpoint of the conservation of force, chemical circulation of matter, and the evolution or perpetuation of organic forms, constitute what has just been precisely traced in Mrs. Northover's case. The popular impressions in regard to inflammation and so-called cancer, are equally erroneous; and the mental impressions conveyed to and left in the mind, as commonly understood, are equally false, for neither represent the facts of life to the mind.

But, returning to the phenomena succeeding to the arrested mechanical motion of the calf's head on Mrs. Northover's breast, the chemical changes in the surplus matter necessitated for repair, as well as that suddenly started downward by the concussion, are sooner or later completed, and the result, there is left a permanent change of form in a small part of one of her lacteal glands. The molecular activity in this last form is, most likely, below that of the normal form of the gland, as evidenced by its slow growth during nearly four years. At this period it is still loose, that is, could be moved about without much pain, and is as large as a walnut. It is, so to speak, an organic form foreign to the human body, thrust, as it were, into the stream of her life, mechanically interfering with its flow, and the result is, more or less pain continuously. Her neighbor, Mrs. Johnson, has what is called a cancer, and she hears all she or her family know about cancers; is shown pictures of its hideous, crab-like form, with long claws, which is represented as leisurely eating out her vitals. In concurrence with the intelligence and usages of the age, she looks to specialists for relief; dreads the knife, and finally falls into the hands of the murderous Blood, who applies chemical combinations of matter and force, capable of accelerating motion in her organic forms, or flesh, to the extent of breaking them up, for that is just what all so-called caustics can or do do. The result, further loss of form, extending to the axilla and neighboring parts, accompanied by untold suffering and agony; and with each change of form function is lost, and extending to the total solid and fluid tissues of her body, until at last it undergoes physical death, and its elements are given up to other and slower motion in physical putrefactive decomposition. Mrs. Northover dies, and dies a victim to false medical philosophy, physiology, pathology, therapeutic and remedial ideals of organic life in health and disease.

Material, form and function are inseparably associated in organized life. Matter and force common to earth, comprise all organic life upon it; and its physical and physiological unities are, therefore, *form* and *motion;* that is, matter must have a definite organic form and motion, or chemical changes must occur in the molecular structure of the form, to the end that any of the phenomena of organic life may be evolved. All so-called diseased action, in like manner, resolves itself into *lost form*, and *increased* or *decreased motion* in the molecular structure of the form or forms of a living body. So far as science, philosophy or empirical experiment is concerned, no organic form, capable of evolving a function of the human body, has ever been constructed by design or accident. The sole power of the remedial art over organic forms is their destruction outright, by surgical, mechanical or chemical processes. But over the physiological and physical unity—motion—the practitioner of the healing art has considerable influence to promote or retard it. Thus, he can retard it by chloral, chloroform, prussic acid, etc., or wholly arrest it, which is death, by the same, and other agencies; or increase it by heat, friction, etc., and by many combinations of matter and force, as strychnia, metallic oxides, and many organic compounds.

Had Mrs. Northover been as properly informed at the beginning of her trouble as near its close, her course would have been widely different; the lost form in her breast would have been removed by the knife, *i. e.* destroyed—*i. e.* again, merged into motion, and motion in the interest of repair promoted by many means, she would probably be alive now, and her case would not have given me the opportunity to answer the question, why she is now dead.

It seems to me that the profession has studied organic life as the little boy studied what the baby did, quite as long, and a good deal longer, than the present state of science warrants, and it is due to itself that advanced ground be occupied, to the end that it may fulfill its mission properly and wisely, limiting its endeavors to possibilities, and ministering to the sick with that certainty which they have a right to expect at its hands. To this end, except as a strictly scholastic classification, the whole catalogue of separate and distinct diseases, and specific entities of disease, must be stricken from its literature. In like manner, all existing classifications of therapeutic or remedial agencies must be abandoned.

There are but three possible ways in which any therapeutic or remedial agent, or any mode of force, direct or indirect, can influence living tissues, viz:

1st. Promoting motion in the interest of repair or waste.

2d. Retarding motion in the interest of repair or waste.

3d. Changing tissue forms.

And into one of these classes will go each and every medicine now known or hereafter to be discovered, to the end of time, or until the universe comes under different laws from those at present in force.

Prof. Bigelow, in the *Review* for May, states, in regard to his new formula for "Dovers powder," on the authority of Headland, that the chlorate of potassæ is "refrigerant, diuretic, sedative, antiseptic, and sialagogue," which, I think he will agree with me, as an old acquaintance, is rather a formidable list of properties for a salt of chloric acid and potassa to possess, which could be much more accurately and scientifically designated as an agent promoting motion, both in the interest of repair and waste, but notably greater in the interest of waste or decay of tissues. Opium, its associate in his new compound, is an agent whose *modus operandi* is to retard motion, both in the interest of repair and waste, but notably in the interest of waste. And as chlorine is an agent ever busy in the laboratory of organic life in rendering the results of tissue decay less harmful, his new Dovers powder presents nicely adjusted antagonisms of force well worthy to take the place of the old or sulphate of potassa Dovers powder. Nor will there occur another such discussion as that upon which the editor comments in his leading article in the same number of the *Review*. Nor will gentlemen, claiming to be scientific, attempt to befog each other in the presence of stern scientific realities, by referring results to other than their real or probable causes. Opium, and of course its alkaloid, morphia, retards motion in a peculiar way, that is, different from chloral, and many other things which are now classed as narcotics, stimulants, sedatives, anti-spasmodics, anodynes, carminatives, etc., neither difficult to understand or state with precision. Nor will it be difficult to determine what any one of the 1500 or 2000 articles used as medicines by the profession do, and how they do it, and the extent to which they do it, seeing that all the powers that any of them possess, with a few exceptions, are to promote or retard motion in the interest of either the repair or decay of the tissues.

From all modes of force capable of changing the forms of the tissues, living beings recoil, and call them either poisons or accidents—accidents, in the cases of falls, blows, burning, freezing, etc.; and poisons, as in the case of the virus of serpents, small pox, measles, scarlatina, syphilis, etc.; and some other organic substances, as opium, chloroform, chloral, belladonna, etc. All modes of force which promptly arrest motion are considered and called deadly poisons, as prussic acid, cyanide of potassium, etc. And it is because the mercurials change forms (salivation) that the people refuse them, when they know that they are prescribed, in many cases.

The conclusion that the world has outgrown the existing philosophy of organic life, in reference to health and disease, and its remedial management, cannot remain much longer without professional recognition, as it already has that of the cultivated outside of it.

DETROIT MEDICAL COLLEGE—CLINICAL RECORD.

PROF. ANDREWS' CLINIC.

Reported by F. Langlois.

CASE I.—*Functional Dyspepsia.* J. S., aged 40, mason; habits irregular; has been unable to work since December last. Complains of pain in the region of the stomach, especially beneath the ensiform cartilage, usually felt about an hour after eating, and attended by acid eructations and occasional vomiting, the matter thrown off frequently streaked with blood. The ingestion of food affords relief for a time, until acid fermentation begins; bowels habitually constipated, which he relieves by the use of laxatives; sleep disturbed; appetite craving or absent; tongue thickly coated with white fur. *General appearance*, alcoholic cachexia marked. *Diagnosis*, functional derangement of the stomach, with probable degeneration of gastric tubules, common to hard drinkers; distinguished from cancer by the absence of tumor, and the occurrence of pain and vomiting only after some time has elapsed since a meal; pain chiefly referred to the centre of the epigastrium, while in cancer it is usually located in the pyloric region. Microscopic examination would show perverted forms of cell growth, with more or less pus, if ulceration of the cancerous mass had taken place.

In chronic ulcer of the stomach pain is felt immediately after eating, and vomiting, when a symptom, occurs at the same time; pain is referred to a small spot, toward the cardiac end of the organ. The ejecta may show pus cells, but no perverted forms—tumor is absent.

Treatment.—Rest to the organ most important, avoidance of food difficult of digestion or in excessive quantities. The milk diet is often attended by the happiest results. It may be taken clear or with one-third of lime-water. It is better to take small quantities often; strict attention to hygienic matters and prudence in the use of liquors must be enjoined; except as directed by the physician, no alcoholic stimulants should be allowed. Usually, little medication will be needed, except to relieve torpor of the bowels, which should be accomplished by the mildest laxatives, when enemata are insufficient. Pain may be allayed by the various narcotics, bismuth, hydrocyanic acid, or carbolic acid exhibited in one or two drops doses suspended in mucilage, repeated every three or four hours. This latter remedy will also, usually, allay nausea and vomiting.

CASE II.—*Functional Derangement of the Heart.* E. M., aged 55, female; married. *General appearance,* ill-nourished and anæmic. Complains of palpitation of the heart since three years, more severe for the last three months; action of the heart increased by emotion or slight exertion, such as changing the position; shortness of breath easily induced; appetite poor; sense of suffocation upon lying down and also after eating; often suffers from flatulency and also epigastric pain and soreness.

Physical examination—Percussion resonance normal; apex beat normal; pulse regular, about 70, feeble; heart sounds normal. *Diagnosis*, functional dyspepsia, inducing sympathetic derangement of the heart's action.

Treatment—To take light nourishing food and gentle exercise, as it can be borne, in the open air. Sunshine and pure air, the two best tonics we possess. The appetite may be aided by the exhibition of fifteen or twenty grains of pepsine at meal time. The nervous excitability will be allayed by the elixir of valerianate of ammonia and minute doses of digitalis. As soon as the stomach will bear them, bitter tonics with iron will be indicated. As an instance of the close sympathy existing between the heart and the nervous system, a case was related in which a slight degree of anæmia, with nervous exhaustion, produces a regular intermission of every third beat of the heart; if the exhaustion is extreme, every other beat is imperceptible at the wrist. A few days rest, with stimulants and tonics, invariably restores the heart to its normal rythm.

Case III.—*Anæmia.* Mrs. ———, aged about 40, married; had her last child about a year since, still-born. Since that time menses have been irregular. *General appearance*, pale and somewhat emaciated. Complains of severe hemicrania, the pain lancinating and usually on the right side of the head; bowels very irregular, constipation for several days, followed by diarrhœa; appetite very poor, ingestion of food frequently attended by flatulency and acid eructations; is easily fatigued; pulse slow and feeble; after slight exercise perceives *muscæ volitantes.*

Diagnosis—General anæmia dependent upon exhaustion following labor. The case is a common one among the poorer classes, where the mother is obliged to rise from her lying-in bed before proper involution of the uterus has taken place and the nervous system recuperated from the unwonted strain upon it. A useful lesson is to be drawn from this woman's history. Prophylaxis in the lying-in room is better than treatment, which may require to be prolonged for months and then result in imperfect recovery, with permanent derangement of the nervous system.

Treatment—Mineral acids and the vegetable bitters, with minute doses of arsenic, continued for some weeks; nourishing food and gentle exercise in the open air.

March 30, 1870.

Selections.

ON THE RELATIONS BETWEEN BODY AND MIND.

By Henry Maudsley, M.D., F.R.C.P.

Lecture I—Part I.

Gentlemen—The relations of mind and body in health and in disease I have chosen as the subject of these lectures, not with the hope of doing full justice to so complex and difficult an inquiry, but because it has for some time been my special work, and there was no other subject on which I should have felt myself equally justified in addressing you. No one can be more deeply sensible than I am how little we do know accurately of the bodily conditions of our mental functions, and how much of that which we think we know is vague, uncertain, and fluctuating. But the time has come when the immediate business which lies before anyone who would advance our knowledge of mind unquestionably is a close and searching scrutiny of the bodily conditions of its manifestations in health and disease. It is most necessary now to make use of the results of the study of mind in health to light and guide our researches into its morbid phenomena, and in like manner to bring the instructive instances presented by unsound mind to bear upon the interpretation of its healthy functions. The physiology and the pathology of mind are two branches of one science; and he who studies the one must, if he would work wisely and well, study the other also. My aim will be to promote the reconciliation between them, and in doing so I shall embrace the occasion, whenever it offers itself, to indicate the principles which should guide our efforts for what must always be the highest object of medical science and art—the production and preservation of a sound mind in a sound body. Actually to accomplish much of this purpose will not lie in my power, but I may bring together fragmentary observations, point out the bearing of them on one another and on received opinions, thus unfold their meaning, and mark broadly the lines which future research must take.

Within the memory of men now living insanity was such a special study, and its treatment such a special art, that it stood quite apart from general medicine in a mysterious and mischievous isolation; owing little or nothing to the results of progress in other branches of medicine, and contributing nothing to their progress. The reason of this it is not hard to discover. The habit of viewing mind as an intangible entity, the notion of it as an incorporeal essence, which science inherited from theology, prevented men from subjecting its phenomena to the same method of investigation as other natural phenomena; its disorders were thought to be an incomprehensible affliction, due to the presence of an evil spirit in the sufferer, or to the enslavement of the soul by sin, or to anything but their true cause—bodily disease. Consequently, the treatment of the insane was not in the hands of intelligent physicians, but was given up to coarse and ignorant gaolers, whose savage cruelties will for all time to come be a great and ugly blot, upon the enlightenment of the age which tolerated them.

Matters are happily changed now. On all hands it is admitted that the manifestations of mind take place through the nervous system; and that its derangements are the result of nervous disease, amenable to the same method of investigation as other nervous diseases. Insanity has accordingly become a strictly medical study, and its treatment a branch of medical practice. Still it is all too true that, notwithstanding we know much, and are day by day learning more, of the physiology of the nervous system, we are only on the threshold of the study of it as an instrument subserving mental function. We know little more positively than that it has such function; we know nothing whatever of the physics and of the chemistry of thought. The conception of mind as a mysterious entity, different essentially from, and vastly superior to, the body which it inhabits and uses as its earthly tenement, but from which its noblest aspirations are to get free, still works openly or in the latent way to obstruct the study of its functions by the methods of physical research. Without speculating at all concerning the nature of mind—which, let me distinctly declare at the outset, is a question which science cannot touch, and I do not dream of attempting to touch—I do not shrink from saying that we shall make no progress towards a mental science if we begin by depreciating the body, not by disdaining it, as metaphysicians, religious ascetics, and maniacs have done, but by laboring in an earnest and inquiring spirit to understand it, shall we make any step forward; and when we have fully comprehended its functions, when we know how to estimate fitly this highest, most complex, and wonderful achievement of organized skill, it will be quite time, if there be then any inclination, to look down upon it with contempt.

The truth is that in inquiries concerning mind, as was once the case in speculations concerning other natural phenomena or forces, it has been the practice to begin where the inquiry should have ended. Just as the laws of physical actions were evoked out of the depths of human consciousness, and the relations of bodies to one another attributed to sympathies and antipathies, attractions and abhorrences, instead of being acquired by patient observation and careful generalization, so has a fabric of mental philosophy been reared in the doubtful revelations of self-consciousness, in entire disregard of the more tedious and less attractive duty of observation of facts, and induction from them. Surely it is time we put seriously to ourselves the question whether the inductive method, which has proved its worth by its abundant fruitfulness wherever it has been faithfully applied, should not be as rigidly used in the investigation of mind as in the investigation of other natural phenomena. If so, we ought certainly to begin our inquiry with the observation of the simplest instances—with its physiological manifestations in animals, in children, in idiots, in savages, mounting by degrees to the highest and most recondite facts of consciousness, the interpretation or the misinterpretation of which constitutes what has hitherto claimed to be mental philosophy. The inductions which we get by observing the simple may be used with success to disentangle the phenomena of the complex; but the endeavor to apply the complex and obscure to the interpretation of the simple is sure to end in confusion and error. The higher mental faculties are formed by evolution from the more simple and elementary, just as the more special and complex structure proceeds from the more simple and general; and in the one case as in the other we must, if we would truly learn, follow the order of development. Not that it is within my present purpose to trace the plan of development of our mental faculties, but the facts and arguments which I shall bring forward will prove how vain and futile it is to strive to rear a sound fabric of mental science on any other foundation.

To begin the study of mind, then, with the observation of its humblest bodily manifestations, is a strictly scientific method. When we come to inquire what these are, it is far from easy to fix the point at which mental functions begin. Without doubt most of the actions of man, and many of those of the higher animals, do evince the operation of mind, but whereabouts in the animal kingdom it first appears, and what part it has in the lower nerve functions of man, are questions not easily answered. The more closely the matter is looked into, the more clearly it appears that we habitually embrace in our conception of mind different nervous functions, some of which proceed from different nerve-centres, and the more necessary it becomes to analyze these functions, to separate more simple and elementary, and to discover in the concrete as much as possible of the meaning of the abstraction. Is the brain the exclusive organ of mind? If it be so, to what category of functions shall we refer the reflex acts of the spinal cord, which take place independently of the brain, and which often achieve as definite an end, and seem to display as intelligent an aim, as any conscious act of volition? It needs not to illustrate in detail the nature and extent of reflex action, which is familiar enough, but I may select a striking example in order to serve as a text for the reflections which I wish to bring forward. One simple fact, rightly understood and truly interpreted, will teach as much as a thousand facts of the same kind, but the thousand must have been previously observed in order to understand truly the one; for it is certainly true that to apprehend the full meaning of common things, it is necessary to study a great many uncommon things. This, however, has been done in this instance by the distinguished physiologists whose labors have fixed on a tolerably firm basis the doctrine of reflex action; we may, therefore, take as our starting point the accepted results of their labors.

It is well known that if the hind foot of a frog that has had its head cut off be pinched, it is withdrawn from the irritation. The stimulus to the afferent nerve reaches the gray matter of the spinal cord, and sets free a force which excites to action the corresponding motor nerves of the same side. When the foot is pinched more strongly, the force liberated by the stimulus passes across the cord to the motor nerves of the opposite side, and there is a simultaneous withdrawal of both limbs; and if the excitation be stronger still, there is a wider irradiation of the effects of the stimulus in the gray matter, and a movement of all four limbs follows, the frog jumping away. These movements of the decapitated frog, which it is plain effect the definite purpose of getting it out of the way of harm, we believe to be analogous to the violent coughing by which food that has gone the wrong way is expelled from the human larynx, or to the vomiting by which offending matter is ejected from the stomach. Independently of consciousness and of will, an organism plainly has the power—call it intelligent or call it what we will—of feeling and eschewing what is hurtful to it, as well as of feeling and ensuing what is beneficial to it.

But the experiment on the frog may be made more striking and instructive. Touch with acetic acid the thigh of a decapitated frog over the internal condyle, and the animal rubs it off with the dorsal surface of the foot of the same side; cut off the foot, and apply the acid to the same spot, and the animal tries to get at it again with its foot, but of course, having lost it, cannot. After some fruitless efforts, therefore, it gives up trying in that way, seems restless, as though, says Pflüger, it was seeking some other way; and at last it makes use of the foot of the other leg, and succeeds in rubbing off the acid. Notably we have here not merely contractions of muscles, but combined and harmonized contractions in due sequence for a special purpose. There are actions that have all the appearance of being guided by intelligence and instigated by will in an animal the recognized organ of whose intelligence and will has been removed.

What are we to say in explanation of the movements? Are they mental, or are they only physical? If they are mental, it is plain that we must much enlarge and modify our conception of mind, and of the seat of mind; if physical, it is plain that we must substract from mind functions that are essential to its full function, and properties that are the very foundations of its development in the higher centres. Some eminent physiologists now maintain, on the strength of these experiments, that the accepted doctrine of reflex action is quite untenable, and that the spinal cord is really endowed with sensation and volition; and certainly these adapted actions seem to give us all the signs of being felt and willed, except telling us that they are so. Before accepting, however, this explanation of the obscure by something more obscure still, it were well to realize distinctly how dangerous a practice it usually is to apply deductively to the interpretation of simple phenomena ideas pertaining to the more complex, and how essential a principal of the method of induction it is to follow the order of evolution, and to ascend from the interpretation of the simple to that of the complex. The explanation savors of the old and evil tendency which has done so much harm in philosophy, the tendency to explain the facts of nature by what we feel to go on in our minds; because we know that most of our actions take place consciously and voluntarily, we can hardly help thinking that it must be the same in the frog. Might we not, however, as well suppose and hold that positive attracts negative and repels positive electricity consciously and voluntarily, or that in the double decomposition of chemical salts one acid chooses voluntarily the other base? It is most necessary to be on our guard against the danger of misapplying ideas derived from internal observation of the functions of mind centres to the interpretation of the functions of lower nerve centres, and so of misinterpreting them. Assuredly we have sad experience enough to warn us against involving the latter in the metaphysical haze which still hangs over the functions of the supreme centres.

All the conclusion which the facts warrant is that actions for a definite end, having indeed the semblance of predesigning consciousness and will, may be quite unconscious and automatic; that the movements of the decapitated frog, adapted as they are to secure its well-being, are no more evidence of intelligence and will than are the movements of coughing, sneezing, and swallowing in man. In the constitution of the animal's spinal cord are implanted the faculties of such movements for self-preservation, which it has inherited as a part of its nature, and without which it could hardly live a day; accordingly it acts necessarily and blindly; though it has lost its foot, it endeavors vainly to act as if its foot was still there, and only when the irritation continues unaffected by its futile efforts makes, in answer to it, those further reflex movements which are the physiological sequences of the unsuccessful movements: it supplements one series of reflex actions by another. But although these purposive movements are not evidence of intelligence and volition in the spinal cord, it is another question whether they do not evince the same physiological properties and the operation of the same laws of evolution as govern the development of intelligence and will in the higher centres.

I have taken the experiment on the frog to exemplify the proposition that designed actions may be unconscious and automatic, because the phenomena are more simple in it than in man, and more easy, therefore, to be understood; but the proposition is equally true of his spinal cord. In its case, however, we have to bear in mind that faculties are not innate to the same degree and extent as in the lower animals, but have to be acquired by education—to be organized, in fact, after birth. It must be taught, just as the brain must, before it can perform its functions as an organ of animal life; and being much more under the control of the more highly developed brain, feeling and volition commonly mingle largely in its functions, and its independent action cannot be so plainly exhibited. But when its motor centres have been taught, when they have gained by education the power of executing what are called secondary automatic acts, it is certain that it can and does habitually execute them independently of consciousness and of will. They become as purely automatic as are the primitive reflex acts of the frog. To the statement, then, that actions bearing the semblance of design may be unconscious and automatic we have now to add a second and most weighty proposition—namely, that acts consciously designed at first may, by repetition, afterwards become unconscious and automatic, the faculties of them being organized in the constitution of the nerve centres, and they being then performed as reflex effects of an external stimulus. This, we shall see, is a most important law in the development of the higher nerve centres.

Let us now go a step further. The automatic acts, whether primary or secondary, in the frog or in the man, which are excited by the suitable external stimulus, may also be excited by an act of will, by an impulse coming downwards from the brain. When this happens, it should be clearly apprehended that the immediate agency of the movements is the same; it is in the motor centres of the spinal cord; the will does not and cannot act upon the nerve-fibres of each muscle individually, but simply gives the order which sets in motion the organized machinery of the movements in the proper motor centres. This is a consideration of the utmost importance, for it exhibits how great a part of our voluntary acts is really the automatic action of the spinal cord. The same movements are effected by the same agency in answer to different stimuli—in the one case to an external stimulus, in the other case to an impulse of will; and in both cases the mind is alike ignorant how they are done. But while the automatic acts take place independently of will, the will is absolutely dependent on the organized experience in the cord for the accomplishment of its acts; without this it would be impotent to do a voluntary act. When, therefore, we have taken out of a voluntary act the large part which is due to the automatic agency of the motor centres, it clearly appears that we have subtracted no small proportion from what we are in the habit of comprising vaguely under mind. We perceive, indeed, how indispensable an exact and faithful observation of the functions of the spinal cord is to a true physiological inquiry into mind, and what an important means of analysis a knowledge of them yields us. Carrying the knowledge so gained into our examination of the functions of the higher nerve centres, we observe how much of them it will serve to interpret. The result is that we find a great part of the habitual functions of the higher centres to be similary automatic, and to admit of a similar physiological interpretation.

There can be no doubt that the ganglionic nuclei of the senses —the sensorial nuclei—are connected with motor nuclei; and that we have in such anatomical arrangement the agency of a number of reflex movements. Most of the instinctive acts of animals are of this kind, the faculties being innate in them. In man, however, who is actually the most helpless, though potentially the most powerful, of all living creatures when he comes into the world, the sensory and associated motor nuclei must be educated, just as the spinal centres must. To illustrate this sensori-motor or instinctive action, we may take the results of Flouren's well-known experiment of removing the cerebral hemispheres of a pigeon. What happens? The pigeon seemingly loses at once all intelligence and all power of spontaneous action. It appears as if it were asleep; yet, if thrown into the air it will fly. If laid on its back, it struggles on to its legs again; the pupil of the eye contracts to light, and, if the light be very bright, the eyes are shut. It will dress its feathers if they are ruffled, and will sometimes follow with a movement of its head the movement of a candle before it; and, when a pistol is fired off, it will open its eyes, stretch its neck, raise its head, and then fall back into its former attitude. It is quite evident from this experiment that general sensibility and special sensations are possible after the removal of the hemispheres; but they are not then transformed into ideas. The impressions of sense reach and affect the sensory centres, but they are not intellectually *perceived;* and the proper movements are excited, but these are reflex or automatic. There are no ideas, there is no true spontaneity; and the animal would die of hunger before a plateful of food, though it will swallow it when pushed far enough into its mouth to come within the range of the reflex acts of deglutition. Here again, then, we have a surprising variety of adapted actions of which the body is capable without the intervention of intelligence, emotion and will—without, in fact, mind in its exact sense having any part in them. The pigeon is brought to the level of the invertebrata, which have no higher nerve-centres than sensory ganglia, no centres of intelligence and will, and which execute all their varied and active movements, all their wonderful displays of instinct, through sensory and associated motor nuclei. They seek what is good for them, avoid what is hurtful to them, provide for the propagation of their kind—perform, indeed, all the functions of a very active life without *knowing* that they are doing so, not otherwise than as our pupils contract to light, or as our eyes accommodate themselves to vision at different distances without consciousness on our part. The highest specializations of this kind of nerve-function are displayed by the ant and the bee; their wonderful instinctive acts show to what a degree of special perfection sensori-motor action may be brought.

Unlike the bee and the ant, man must slowly learn the use of his senses and their respondent movements. This he does by virtue of the fundamental property of nerve centres, whereby they react in a definite way to suitable impressions, organically register their experience, and so acquire by education their special faculties. Thus it is that many of the daily actions of our life, which directly follow impressions on the senses, take place in answer to sensations that are not perceived—become, so to speak, *instinctive;* some of them being not a whit less automatic than the instinctive acts of the bee, or the acts of the pigeon deprived of its hemispheres. When we move about in a room with the objects in which we are quite familiar, we direct our steps so as to avoid them, without being conscious what they are, or what we are doing; we see them, as we easily discover if we try to move about in the same way with our eyes shut, but we do not perceive them, the mind being fully occupied with some train of thought. In like manner, when we go through a series of familiar acts, as in dressing or undressing ourselves, the operations are really automatic; once begun, we continue them in a mechanical order, while the mind is thinking of other things; and if we afterwards reflect upon what we have done, in order to call to mind whether we did or did not omit something, as for instance to wind up our watch, we cannot satisfy ourselves except by trial, even though we had actually done what we were in doubt about. It is evident, indeed, that in a state of profound reverie or abstraction, a person may, as a somnambulist sometimes does see without knowing that he sees, hear without knowing that he hears, and go through a series of acts scarcely, if at all, conscious of them at the time, and not remembering them afterwards. For the most distinct display of sensori-motor action in man, it is necessary that his cerebral hemispheres, which are so largely developed, and intervene much in the functions of the subordinate centres, should be deeply engaged with their own functions, or that these should be suspended. This appears to be the case in those brief attacks of epileptic unconsciousness known as the *petit mal,* in which a person will sometimes go on with the work he was engaged in at the time of the attack, utterly unaware of the momentary interruption of his consciousness. There are many instances of this sort on record, which I cannot stop to relate now;

they prove how large a part sensori-motor functions, which are the highest nerve functions of so many animals, play in our daily actions. We ought clearly to apprehend the fact that, as with the spinal cord, so here, the movements which take place in answer to the stimulus from without may be excited by the stimulus of the will descending from the hemispheres, and that, when they are so excited, the immediate agency of them is the same. The movements that are outwardly manifest are, as it were, contained inwardly in the appropriate motor nuclei; these have been educated to perform them. Hence it is that, when the left corpus striatum is broken up by disease, the right cannot do its special work; if it could, a man might write with his left hand when his right hand was disabled by paralysis.

Thus much then, concerning our sensori-motor acts. When we have yielded up to the spinal cord all the part in our actions that properly belongs to it, and to the sensory ganglia and their connected motor nuclei all the part that belongs to them, we have subtracted no inconsiderable part from the phenomena which we are in the habit of designating mental and including under mind. But we still leave untouched the highest functions of the nervous system—those to which the hemispherical ganglia minister. These are the functions of intelligence, of emotion, and of will; they are the strictly mental functions. The question at once arises whether we have to do in these supreme centres with fundamentally different properties and different laws of evolution from those which belong to the lower nerve centres. We have to do with different functions certainly; but are the organic processes which take place in them essentially different from, or are they identical with, those of the lower nerve centres? They appear to be essentially the same: there is a reception of impressions, and there is a reaction to impressions, and there is an organic registration of the effects both of the impressions and of the reactions to them. The external stimuli do not, it is true, ascend directly to the supreme centres as they do the spinal centres and the sensory centres; they are transmitted indirectly through the sensory ganglia; it is through the senses that we get our ideas. This is in accordance with the anatomical observation—which, however, is disputed—that no sensory fibres go directly through to the hemispheres, and no motor fibres start directly from them; both sensory and motor fibres stopping at the corpora striata and thalami optici, and new fibres connecting these with the hemispheres. But this does not alter the fundamental similarity of the organic processes in the higher centres. The impressions which are made there are the physiological conditions of *ideas*. The feeling of the ideas is *emotion;* for I hold emotion to mean the special sensibility of the vesicular neurine to ideas. The registration of them is *memory;* and the reaction to them is *volition.* *Attention* is the maintenance of the tension of an idea or a group of ideas—the keeping it before the mind; and *reflection* is the successive transference of energy from one to another of a series of ideas. We know not, and perhaps never shall know, what mind is; but we are nevertheless bound to investigate, in a scientific spirit, the laws of its functions, and to trace the resemblances which undoubtedly exist between them and the functions of lower nerve centres.

Take, for example, the so-called faculty of memory, of which metaphysicians have made so much as affording us the knowledge of personal identity. From the way in which they usually treat of it, one would suppose that memory was peculiar to mind, and far beyond the reach of physical explanation. But a little reflection will prove that it is nothing of the kind. The acquired functions of the spinal cord, and of the sensory ganglia, obviously imply the existence of memory, which is indispensable to their formation and exercise. How else could these centres be educated? The impressions made upon them, and the answering movements, both leave their traces behind them, which are capable of being revived on the occasions of similar impressions. A ganglionic centre, whether of mind, sensation, or movement, which was without memory, would be an idiotic centre, incapable of being taught its functions. In every nerve-cell there is memory, and not only so, but there is memory in every organic element of the body. The virus of small-pox or of syphilis makes its mark on the constitution for the rest of life. We may forgot it, but it will not forget us, though, like the memory of an old man, it may fade and become faint with advancing age. The manner in which the scar of a cut in a child's finger is perpetuated, and grows as the body grows, evinces, as Mr. Paget has pointed out, that the organic element of the part remembers the change which it has suffered. Memory is the organic registration of the effects of impressions, the organization of experience, and to recollect is to revive this experience—to call the organized residue into functional activity.

The fact that memory is accompanied by consciousness in the supreme centres does not alter the fundamental nature of the organic processes that are the condition of it. The more sure and perfect, indeed, memory becomes, the more unconscious it becomes; and when an idea or mental state has been completely organized, it is revived without consciousness, and takes its part automatically in our mental operations, just as a habitual movement does in our bodily activity. We perceive in operation here the same law of organization of conscious acquisitions as unconscious power, which we observed in the functions of the lower nerve centres. A child, while learning to speak or read, has to remember the meaning of each word, must tediously exercise its memory; but which of us finds it necessary to remember the meanings of the common words which we are daily using, as we must do those of a foreign language with which we are not very familiar? We do remember them, of course, but it is by an unconscious memory. In like manner, a pupil, learning to play the piano-forte, is obliged to call to mind each note; but the skillful player goes through no such process of conscious remembrance; his ideas, like his movements, are automatic, and both so rapid as to surpass the rapidity of succession of conscious ideas and movements. To my mind, there are incontrovertible reasons to conclude that the organic conditions of memory are the same in the supreme centres of thought as they are in the lower centres of sensation and of reflex action. Accordingly, in a brain that is not disorganized the organic registrations are never actually forgotten, but endure while life lasts; no wave of oblivion can efface their characters. Consciousness, it is true, may be impotent to recall them; but a fever, a blow on the head, a poison in the blood, a dream, the agony of drowning, the hour of death, rending the veil between our present consciousness and these inscriptions, will sometimes call vividly back, in a momentary flash, much that seemed to have vanished from the mind for ever. In the deepest and most secret recesses of mind, there is nothing hidden from the individual self, or from others, which may not be thus sometimes accidentally revealed; so that it might well be that, as De Quincy surmised, the opening of the book at the day of judgment shall be the unfolding of the everlasting scroll of memory.

(To be continued.)

ON FAILURE OF VISION, FROM DISEASE OF THE RETINA, AS A SYMPTOM OF BRIGHT'S DISEASE.

By John Green, M. D., Professor of Ophthalmology in the Saint Louis College of Physicians and Surgeons.

[In this paper, which was read before the Missouri Medical Association at its late meeting in this city, I have desired simply to call attention to failure of vision as an important symptom of Bright's disease, and one which in many cases may lead to the detection of this grave constitutional malady at a time when the other signs are still so obscure as not to excite suspicion.]

IT was observed by Dr. Addison, more than thirty years ago (Guy's Hospital Reports, Vol. IV, 1839), that the grave cerebral troubles which arise in the course of Bright's disease are often preceded by nervous symptoms, among which he mentions headache, giddiness, and dullness of sight.

Ten years later, Prof. Landouzy, of Rheims (*Gazette Médicale*, and *Annales d'Oculistique*, 1849), called attention to the very frequent coexistence of amblyopia with Bright's disease, but it was vaguely referred to a cerebral origin, and classed among the nervous derangements incident to the progress of the malady.

In 1850, Türk, of Vienna, described certain changes in the minute structure of the retina in a subject who had died of Bright's disease, thus throwing the first light upon the pathology of the affection of the eye (*Zeitschr. der k. k. Ges. der Aerzte zu Wien*, 1850, No. 4, quoted from Arlt).

The discovery of the ophthalmoscope by Helmholtz, in 1851, followed almost immediately by its employment in the examination of the eye in disease, provided the means of studying the diseases of the choroid and retina in the living subject, and led to the speedy recognition, by many observers, of the pathological changes which had been demonstrated anatomically by Türk.

The morbid changes in the retina, as they appear when seen by the aid of the ophthalmoscope, have been admirably depicted by Liebreich (*Atlas d'Ophthalmoscopie*, Paris, 1863). An excellent description of the retinal changes, and a tolerable copy of one of Liebreich's plates, are contained in Mr. Soelberg Wells' late work "on the Diseases of the Eye" (London, 1869), a book which is now readily accessible to American physicians, and to which, therefore, I would refer for a detailed account of the anatomical lesion and ophthalmoscopical appearances. My present object is to call attention to the fact that failure of vision may be the first symptom to attract the serious attention of the patient and his physician, and that, in such cases, the ophthalmoscopic examination of the eye may reveal changes in that organ, so conspicuous as to command instant recognition, and so characteristic as to constitute a symptom of confirmed renal disease at least as conclusive as the detection of albumen in the urine.

In illustration of this point I have briefly to report four cases of Bright's disease in which the changes in the retina as revealed by ophthalmoscopic examination first aroused the suspicion of renal trouble.

CASE 1. — Dr. S., about 35 years of age, consulted me early in the autumn of 1866, on account of a very decided dimness of vision which had been gradually increasing since he had first noticed it a month or so before. He appeared much depressed in spirits, and was evidently in bad health, suffering from occasional severe attacks of pain in the back of the head, and having had several attacks of an epileptiform character. His extreme nervousness made it difficult to obtain any very satisfactory history of his case, nor could the friend who accompanied him give me much information.

The attempt to read revealed the fact that only large type (pica) could be distinguished, and that slowly and with difficulty. Examination by the test letters of Snellen showed that the acuteness of vision, as expressed according to this method, had become reduced to one-fifth or one-sixth of the normal. The pupils were quite small, and my proposal to dilate them by atropia was declined through fear of possible temporary interference with the patient's professional work.

The ophthalmoscopic examination, made under this disadvantage, revealed marked deposit of white glistening exudation around the disc of the optic nerve, obscuring its outline; there was also decided swelling of the disc, with some extravasation of blood in the form of streaks radiating from the point of entrance of the central artery and vein. The region of the macula lutea could not be examined, in the contracted state of the pupils, owing to the strong reflection of light from the cornea, but the extent of the retinal surface occupied by the exudation was so great as to favor the diagnosis of *retinitis nephritica*, rather than double *neuritis* from intracranial pressure obstructing the return of blood through the ophthalmic veins.

The very serious nature of the case was explained to a professional friend of the patient, and at my request an examination was made of the urine which revealed the presence of albumen in large quantity.

Dr. S. failed rapidly in health almost from this time; anasarca soon followed, and he died about four months after I first saw him. I was subsequently informed by an intimate friend of the patient that his sight became much worse a few weeks after I saw him, and that it afterwards improved, so that shortly before his death he could read common print with ease, an occurrence perfectly in accord with many clinical observations supported by accurate ophthalmoscopical studies.

CASE 2.—J. H. McN., 40 years of age, residing in Crittenden Co., Arkansas, consulted me February 26th, 1868, in company with his physician, who had come with him to St. Louis. He was in rather feeble health and had been seen in consultation, with his physician, by two eminent practitioners of this city. Albuminuria was not suspected. The patient was referred to me for investigation of a recent failure of sight. The right eye had been lost as an organ of vision several years before, from an inflammatory attack of which he could give no intelligible history; this eye had, however, been recently inflamed for a second time, and it had been thought that the present failure of sight in the left eye might possibly be of sympathetic origin.

Vision was found to be reduced to about one-fiftieth of the normal, as expressed by Snellen's method by the use of test letters, and the ophthalmoscope revealed the characteristic picture of nephritic retinitis. The changes were especially marked in the region of the macula lutea.

A chemical examination of the urine was made on the spot; the quantity of albumen was so large as to form a firm jelly on the application of heat.

The further history of this patient is not positively known.

CASE 3.—C. A. M., 25 years of age, had been near-sighted for many years (M=1–9). His vision was nearly normal as measured by the power of distinguishing letters, but he had lately noticed an appearance as of a cloud before one of his eyes, which he attributed to over-work at his profession as a draughtsman. His very intelligent medical adviser suspected sub-retinal effusion as a consequence of the myopia, and referred the case to me for examination. The ophthalmoscope revealed the same retinal lesions as in the former case; the exudation being quite conspicuous in both eyes, but chiefly in the region of the disc of the optic nerve. The urine proved to be highly albuminous, but contained very few casts. Those observed were of the granular and large waxy varieties.

Mr. M. had not considered himself sick, although he was subject to frequent attacks of severe headache, but thought he had confined himself too closely to work within doors, and needed rest. Even after the detection of the nature of his disease it was difficult to make out any train of symptoms suggestive of renal disorder.

One week later Mr. M. left St. Louis, for his former home in Massachusetts. On his way he took a severe cold in a sleeping car, and had scarcely reached his home when alarming symptoms of uræmic poisoning set in. He recovered from this attack, however, but gradually failed in health, and died in the summer of 1869, about six months after the first detection of the nature of his disease.

Case 4.—Dr. C., about 55 years of age, an eminent physician of this State, consulted me August 4th, 1869, in company with one of the first physicians of this city, on account of failing sight. He could still see well enough to go about, but found it very difficult to read even in a strong light. He was not aware of any especial disease, although he considered himself as somewhat worn by the fatigues of practice and the heat of summer. The symptoms referable to the eyes were suggestive of cataract, and he was prepared for this diagnosis. The ophthalmoscope, however, showed that all the media of the eye were perfectly transparent, and that the defect in vision was the consequence of advanced retinal lesion in both eyes.

The diagnosis of albuminuria was communicated to the consulting physician, and was immediately confirmed by a chemical examination of the urine. The albumen was so abundant as to render the contents of the test-tube almost solid when heated.

I have received information that Dr. C. died three months after I saw him in consultation.

The four cases now reported sufficiently illustrate the most important features of the amblyopia of Bright's disease. The one constant subjective symptom is failure of vision, which may be so slight as scarcely to attract notice, or so great as to incapacitate the patient from guiding himself. This may appear at any stage of the disease, and may increase and diminish or even almost entirely disappear after having reached nearly total blindness, while the fatal malady is steadily marching onward to its inevitable termination. It is absolutely painless in all its stages, and is marked by no external sign of inflammation. Occasionally, as in case 4, in an elderly person with otherwise normal eyes it is very liable to be mistaken for incipient cataract, on account of the general similarity of the subjective signs in the two affections. In case 1, the coexistence of serious head symptoms naturally suggested the diagnosis of amaurosis from cerebral disease. Cases 2 and 3 seemed to point to local lesions of the eye, in the one instance to commencing sympathetic ophthalmitis, and in the other to choroidal and retinal changes dependent on the distention of the eye-ball incident to progressive myopia.

The diagnosis of albuminuric retinitis by the ophthalmoscope is usually a matter of great simplicity. The principal source of possible mistake lies in the close resemblance which some cases of this disease bear to infiltration of the disc of the optic nerve and the retina immediately around it, occurring simultaneously in both eyes from obstructed venous circulation dependent on intracranial pressure from effusion, etc. Very recently, too, a case has been most carefully studied and reported by Dr. H. D. Noyes, of New York, in which the ophthalmoscopic appearances were absolutely identical with those which belong to albuminuric retinitis, but in which the disease was unmistakably not Bright's disease but *diabetes*. This case, taken in connection with the microscopical investigation of the retinal changes in a case of diabetes observed by Treitz and reported by Arlt, leaves scarcely a doubt of the identity of the retinal affection, and goes far, therefore, to confirm the few earlier but somewhat defective reports of retinitis associated with glycosuria.

The important fact for the general practitioner of medicine, to be deducted from the study of cases like those now reported, is that simple failure of vision, of whatever grade, and especially when it occurs simultaneously or nearly so in the two eyes, may be a symptom of grave renal disease which has not yet revealed itself by other marked signs. The chemical and microscopical examination of the urine becomes, therefore, an imperative duty in this class of cases in which we should, *a priori*, expect least from it.—*Saint Louis Medical and Surgical Journal.*

DIAGNOSIS OF THE CAUSE OF ICTERUS.

By Professor Skoda, Vienna.

PROFESSOR Skoda says, in a first attack of icterus, when the individual is otherwise well, and has never had anything similar, it is difficult to determine its cause (*Allgem. Wiener Med. Zeitung*, No. 32, 1868).

We generally assume that there is a catarrhal tumefaction of the biliary ducts, but this is not positive, because one affected with gall-stones must also have a *first* attack of icterus at some time.

The local suffering when gall-stones are present is often intense; but in catarrhal disease of the biliary ducts, the duodenum, and stomach, there is no cause for intense pain, and it is not particularly severe; the patient has such symptoms as an intense catarrh usually produces. When the icterus depends upon gall-stones, colic is usually an attendant symptom; we have vehement pain at the hypochondrium, which continues for some time, and then the jaundice appears. Such an initial stage points to the existence of gall-stones; but when we first have a febrile movement, which may be said to be of catarrhal origin, rigors, a feeling of general discomfort, and the appearance of the yellow color without pain, we may regard it as a case of catarrhal icterus. When a person is attacked for the first time, observe his age; permanent obstructions may, indeed, occur at any age, but are much more frequent in advanced years. In the case of a first attack in a young person, the probability is very great that it is not caused by gall-stones, tumor, stricture, or impermeability of the biliary ducts. We know it well as a disease which often follows a catarrhal affection of the duodenum and biliary ducts. This diagnosis may be made with more certainty if the disease began with symptoms pointing to duodenal catarrh.

The patient loses appetite, fevers easily, has chilliness, perhaps night sweats, nausea, headache, languor, and depression of spirits. These symptoms last from a few hours to many days, in some instances, and then icterus suddenly makes its appearance. Under these circumstances our diagnosis is catarrh of the stomach, or duodenum.

In the first attacks of older persons, the probability of catarrh is diminished; and we have, possibly, an obstruction of the ductus choledochus, perhaps from tumor or gall-stones; though, of course, it is also possible to trace the disease to a gastric catarrh in old persons.

But in order to confirm the latter diagnosis, the initial movement must have been just as described for catarrhal icterus. Cases of icterus also occur in which the patient has had no prodromes of anorexia, pain, or fever. In these it is very improbable that catarrh of the duodenum and biliary ducts causes the disease; but it is probable that we have another, and a permanent, obstruction—occlusion of the biliary ducts.

Of course we can not make our diagnosis with entire certainty, but it is well to mention the possibility of such a case not getting well again, or only slowly diminishing with the reduction of the biliary coloring matter in the blood.

Again, a case may occur in an aged person, attended by severe attacks of pain in the right hypochondriac region, nausea, emesis, perhaps spasms of superior or inferior extremities.

We would risk much in pronouncing this a catarrhal attack, and it is much more likely that we have a permanent obstruction; perhaps the pain is dependent upon strong tension of the ductus choledochus and hepaticus, or perhaps it is occasioned by the process of stagnation ("*stanung*").

Should we have carcinoma before us it is quite likely that catarrhal icterus may arise from the resultant irritation. When pain occurs during the commencement of icterus, it is probable that the jaundice does not arise from catarrh; but this may occur secondarily.

When icterus occurs for the second time, we must carefully observe if the individual may possibly have a permanent obstruction or not.

When jaundice occurs repeatedly in very young individuals, we have difficulty in deciding that gall-stones are the cause; but we may say, this individual frequently suffers catarrhal disease of the duodenum, ductus choledochus, and hepaticus; the icterus being recurrent, the diseased condition must return at stated intervals.

As soon as the age is somewhat advanced, however, a frequent recurrence of icterus will justify the conclusion that we have to deal with a permanent obstruction; and we have no doubt on the subject if intense pain is an accompaniment. If the icterus last very long—months, for example—we surely have permanent obstruction, either from gall-stones or neoplasmata.

Catarrhal disease of the stomach, bowels, or biliary ducts, does not, as a rule, last so long; indeed a return of the flow of the bile shows itself during the continuation of catarrhal disease. A long-continued icterus also shows some peculiarities in the coloration of the skin; in some cases it becomes somewhat greenish, in some even blackish or brownish, and when this happens the probabilities are that gall-stones or neoplasmata are present.—*Edinburgh Medical Journal.*

A SIMPLE, CHEAP AND EFFICIENT SUBSTITUTE FOR THE STOMACH PUMP.

By John T. Hodgen, M. D., Professor of Anatomy, Saint Louis Medical College.

About a year ago, I had a case of stricture of the œsophagus so narrow that my patient could not swallow even liquids. To sustain life I resorted to a small stomach tube (a gum catheter, in fact), as a means of injecting liquid nourishment; to this I fixed the elastic tube of one of Davidson's syringes.

On one occasion the vessel containing the liquid happened to be higher than the patient's stomach, and I observed while the syringe was not being used, that the liquid continued to flow into the stomach—the action being that of a syphon. I at once, to test the syphon, substituted a simple elastic tube for the syringe, and found the stomach could be as readily emptied as filled. Thus I conceived the idea of using a syphon instead of a stomach pump, and have used the same in a case of poisoning recently with the most complete success.

I attach four feet of India rubber tubing to a stomach tube, fill both with water by simply dipping it in the liquid end first, then compressing the elastic tube between the thumb and finger to keep the fluid from running out, introduce the stomach tube, lower the outer end of the elastic tube, and the contents of the stomach pour out as readily as if from an open vessel. When the fluid ceases to flow, I dip the outer end of the tube beneath the surface of water, elevate the vessel containing it, and the stomach is soon filled ; lower again the outer end of the tube and the stomach is emptied. This can, of course, be repeated as often as is necessary.

The advantages claimed for this simple contrivance are, that it may be almost improvised, is of speedy and easy application, has no valves to become obstructed or deranged, and is less expensive than a stomach pump.

The same principle may be applied in injecting fluids into the bowels, as indeed it has been for injecting into the bladder, uterus and vagina.—*Saint Louis Medical and Surgical Journal.*

ADDISON'S DISEASE.

Dr. Gordon gave the following summary of the principal facts known in respect to Addison's disease, at a meeting of the Army Medico-Chirurgical Society, held at Portsmouth, *à-propos* of a case reported by Dr. Wales. 1. It is a matter of doubt whether "Addison's disease" may not at times be hereditary. 2. It is equally so whether, under certain conditions, it may not be connected with syphilitic cachexia. 3. It has no necessary connection with pulmonary tubercle. 4. Nor with albuminuria. 5. The presence of the characteristic disease of the spura-renal capsules is not necessarily attended by regional pain. 6. In only one of the cases described did medical treatment appear to retard the disease. 7. The symptoms of the disease are, for the most part, peculiar and characteristic. 8. Bronzing of the skin may occur where "tubercular" matter is not after death found in the supra-renal capsules. 9. It may be matter of doubt whether in some cases the bronzing of the skin described as Addison's disease, may not really be the discoloration which attends secondary syphilis. 10. The exact relationship between bronzing of the skin and supra-renal disease are still open questions. 11. There is some reason to believe that Dr. Addison himself was aware that the connection between the two conditions was not invariably found to exist. 12. The most frequent morbid appearance in the supra-renal capsules, when disease of those organs is discovered, in cases of bronzing is " tubercular " deposit. 13. It is possible that, as suggested by Dr. Watson, bronzing only occurs when disease of the supra-renal capsules is far advanced, or where both these organs are much disorganized. 14. So far as observations have yet gone no connection has been traced between bronzed skin and disease of any other of the ductless glands. 15. And finally, it seems reasonable to believe that the true nature and associations of this effection, known as Addison's disease, have yet to be established.—*Medical Times and Gazette.*

THERAPUETIC USES OF IODOFORM.

DR. STILES KENNEDY, of Newark, Delaware, communicates the results of his observations on the effects of this drug, which he considers to possess great value in various constitutional and nervous diseases. He gives the details of a case of periodic gastric neuralgia, probably connected with a rheumatic diathesis of several months' standing, in a man not 30 years of age, of antecedent good health and vigor. The pains in the stomach recurred on each afternoon, and lasted well during the remainder of the twenty-four hours. Quinine, iron, morphia, arsenic, blisters, mercury, and other remedies, had been administered without advantage. Two grains of iodoform, and the same quantity of pulv. ferri, were prescribed in pills three times a day, and in a week he was well. The second case was that of a man aged 45, who suffered from violent and frequently recurring pain in the scalp, running from the eyebrows to the occiput. A great variety of treatment had here also been adopted, the last being heroic doses of quina, morphia, iron, and arsenic in combination, but without effect. Dr. Kennedy therefore ordered iodoform, pulv. ferri, of each one hundred grains, veratria one grain; to be divided into fifty pills, one to be taken three times a day. After twelve days' continuance the pain completely disappeared, and in the course of the last year only recurred twice, on each occasion being quickly removed by recommencing the use of the pills. A similar combination, without the veratria, was found very effective in sciatica, by another physician, and in several cases of ague by a third. Dr. Kennedy recommends it strongly as an addition to the ordinary plasters and ointments for syphilitic periositis, etc.; in fact, he says, an ointment containing from thirty to sixty grains of iodoform to an ounce of lard is one of the most delightful remedies, so far as relief is concerned, to painful burns, sores, chancres, boils, etc., that can be found, promoting rapid healing. In two cases of chancre the dry powder was applied with magical results.—*The Medical and Surgical Reporter.*

TREATMENT OF SNAKE BITE.

Dr. Fayrer, in an interesting series of experiments, in which he has tested the validity of the claim made by Dr. Halford for ammonia as an agent to effect a speedy cure of the bites of the poisonous snakes, appears to have arrived at opposite conclusions to those of the Melbourne professor. Large dogs were caused to be bitten after their veins had been exposed, and every preparation made for rapidly effecting injection, yet in these, sometimes after a brief space of temporary improvement, death rapidly ensued. The supposed remedy, liquor ammoniæ of sp. gr. ·959 B. P., was in some instances injected directly into a vein, whilst in others it was hypodermically injected, but with equal ill success. Attempts were made to make a cobra bite itself, to make one cobra bite another, and to make a viper bite a cobra, etc., and the curious result was obtained that the poison of these animals has no effect, or if any, very slight effect upon itself, upon its own species, or upon venomous snakes, whilst it is injurious to innocent snakes. Dr. Fayrer thinks the poison acts by directly effecting the nervous centres, and that its action is far too swift and powerful to permit of the employment of any antidote.—*Edinburgh Medical Journal.*

Pharmacy and Chemistry.

CONVENTION FOR REVISING THE PHARMACOPŒIA.

The fifth decennial convention for the revision of the U. S. Pharmacopœia met at Washington, D. C., on the 4th and 5th of May last. Prof. Carson, of Philadelphia, was called to the chair, and Dr. J. C. Riley, of Washington, chosen Secretary *pro tem.*

Representatives were present from most of the pharmaceutical organizations in the country, as well as from numerous medical colleges and associations.

A committee having been appointed to nominate permanent officers, the following names were proposed: *President*, Dr. Jos. Carson, Philadelphia; *Vice Presidents*, Dr. Thos. Miller, D. C., and Wm. Proctor, Jr., Philadelphia; *Secretary*, John C. Riley, D. C.; *Assistant Secretary*, Dr. Jas. M. Morgan, D. C. The nominees were duly elected.

The following resolutions were recommended for adoption by Dr. Lee, of the committee appointed to report a plan for the revision of the Pharmacopœia:

Resolved, That a Committee of Revision and Publication be appointed, to consist of fifteen members, including the President of this convention as one, to which shall be referred all communications relating to the revision of the Pharmacopœia, and that three members shall form a quorum.

Resolved, That this committee shall meet at the city of ——— and be convened as soon as practicable by the President of the convention, for final organization.

Resolved, That the committee shall be authorized to publish the work after its revision, and to take all other measures that may be necessary to carry out the views and intentions of the convention.

Resolved, That if, in the judgment of the Committee of Revision, it should become necessary, before the meeting of the convention of 1880, to revise its labors, it is hereby authorized to publish a new edition.

Resolved, That the expenses of the Committee on Revision shall be paid from the income of the copyright.

Resolved, That the measures of capacity be abandoned in the Pharmacopœia, and that the quantities in all formulas be expressed both in weights and in equal parts by weight.

Resolved, That in the revision of the officinal list and formulas the wants of the medical profession in all parts of the United States should be considered in reference to local peculiarities in climate and population, and for these reasons that the scope of the work be rather extended than abridged.

Resolved, That the Committee of Revision shall have power to fill their own vacancies.

Resolved, That after the completion of its labors the committee shall transmit a report of its proccedings to the Secretary of this convention, to be laid before the next convention.

Resolved, That the fourteen remaining members of the Committee of Revision and Publication be selected by a nominating committee formed of one delegate from each institution represented in this convention, and of one from the army and navy respectively, to be appointed by the President.

The report was accepted, and on motion the resolutions were considered *seriatim*, and, after some discussion, adopted.

On motion of Mr. Colcord the blank in the second resolution was filled by the insertion of the word "Philadelphia."

Mr. Manlius Smith, of New York, offered the following resolution, which was adopted:

Resolved, That this committee are authorized to investigate any new medicine that may be brought forward, and devise formulas for the appropriate preparation of it, and to publish such formulas, which formulas shall thenceforth be considered officinal.

Dr. Horner, of Virginia offered the following:

WHEREAS, The abuse of medicines the vehicle of which is alcohol, has proved injurious to the health of the community,

Resolved, That the convention for the revision of the Pharmacopœia consider the expediency of reducing the number of alcoholic preparations.

The following gentlemen were appointed on the Committee of Revision to coöperate with Prof. Carson, chairman:

Dr. George B. Wood, Alfred B. Taylor, John M. Maisch, Dr. Robert Bridges, Philadelphia; W. Manlius Smith, New York; Albert E. Ebert, Chicago, Ill.; J. Farris Moore, Baltimore, Md.; F. H. Markoe, Boston, Mass.; Dr. John C. Riley, Washington, D. C.; Dr. Thomas Jenkins, Louisville, Ky.; Dr. Chas. A. Lee, Buffalo, N. Y.; Dr. J. S. Welford, Richmond, Va.; Wm. T. Wenzell, San Francisco, Cal.; W. S. W. Ruschenberger, U. S. Army and Navy.

Dr. Loomis, of Washington, moved that the rules adopted by the convention of 1860 for the meeting in 1870 be adopted for the convention of 1880, simply changing the dates; which motion was unanimously adopted.

Dr. B. F. Craig, of the District of Columbia, offered the following:

Resolved, That the Committee of Revision be instructed to include some part of the metrical system in the list of officinal weights and measures.

The resolution, after a prolonged discussion, was adopted.

Prof. Proctor, of Pennsylvania, offered the following, which was unanimously adopted:

Resolved, That the thanks of this convention are due to the faculty of the National Medical College of the District of Columbia for the use of their building for the purposes of the convention.

POISONOUS HAIR PREPARATIONS AND COSMETICS.

We make the following extracts from Prof. C. F. Chandler's report to the Metropolitan Board of Health:

Col. Emmons Clark, Secretary Metropolitan Board of Health:

Sir—In response to the resolution of the Board, directing "the chemist to examine the various hair tonics, washes, cosmetics, and other toilet preparations in general use, and to report what ingredients, if any, they contain of a character injurious or dangerous to those who use them," I beg leave to submit the following report of the results thus far reached:

My examination has been specially directed to the mineral poisons; no tests have been as yet made for vegetable or animal substances, as, for example, cantharides, which I have reason to believe is sometimes employed.

The articles which I have examined may be classed as

I.—Hair tonics, washes, and restoratives.
II.—Lotions for the skin.
III.—Enamels.
IV.—White powders for the skin.

I.—HAIR TONICS, WASHES AND RESTORATIVES.

Of these, sixteen have been examined, and, with but one exception, all have been found to contain lead, generally in the form of the acetate or sugar of lead.

Hoyt's Hiawatha Hair Restorative.—This is an ammoniacal solution of the nitrate of silver, containing 4.78 grains of the nitrate in one fluid ounce. It contains no other metals.

The following table exhibits the results of the analyses of the remaining preparations of this class:

		Grains of Lead in one fluid ounce.
1.	Clark's Distilled Restorative for the Hair	0.11
2.	Chevalier's Life for the Hair	1.02
3.	Circassian Hair Rejuvenator	2.71
4.	Ayer's Hair Vigor	2.89
5.	Wood's Hair Restorative	3.08
6.	O'Brien's Hair Restorative of America	3.28
7.	Gray's Celebrated Hair Restorative	3.39
8.	Phalon's Vitalia	4.69
9.	Ring's Vegetable Ambrosia	5.00
10.	Mrs. S. A. Allen's World's Hair Restorer	5.57
11.	L. Knittels' Indian Hair Tonique	6.29
12.	Hall's Vegetable Sicilian Hair Renewer	7.13
13.	Tebbetts' Physiological Hair Regenerator	7.44
14.	Martha Washington Hair Restorative	9.80
15.	Singer's Hair Restorative	16.39

RECAPITULATION.—Only one of this class of preparations is free from lead, which metal seems to be the essential constituent in most cases. Most of the sediments observed in the bottles, and which require that the bottle "be well shaken," etc., consist of sulphur, which it is intended shall ultimately unite with the lead to produce the dark colored sulphide of lead, or, as one of the manufacturers has it, "the original youthful beauty and color."

II.—LOTIONS OR WASHES FOR THE COMPLEXION.

The lotions examined, with a single exception, proved to be entirely free from lead or other injurious metals. The exception was found in Perry's Moth and Freckle Lotion, one fluid ounce of which contains

Mercury in solution	2.67	grains.
Zinc "	0.99	"

equivalent to

Corrosive sublimate	3.61 grains.
Sulphate of zinc (crystallized)	4.25 "

The sediment contains, also, mercury, lead and bismuth.

III.—ENAMELS FOR THE SKIN.

The enamels consist of white powders, suspended in clear liquids; on standing the powders subside, but agitation quickly incorporates them with the liquid again. The following contain lead, mostly, if not entirely, in the form of *carbonate;* they are, thefore, simply "white lead" ground in water:

	Grains of Lead in one fluid ounce, after shaking.
Eugenie's Favorite	108.44
Phalon's Snow White Enamel	146.28
" " Oriental Cream	190.99

IV.—WHITE POWDERS FOR THE SKIN.

The white powders examined consist of carbonate of lime, carbonate of magnesia, clay, or French chalk, either singly or mixed. Nothing injurious was detected in any of them.

CONCLUSIONS.

It appears from the foregoing:

1. The hair tonics, washes and restoratives, contain lead in considerable quantities; that they owe their action to this metal, and that they are consequently highly dangerous to the health of persons using them.

2. With a single exception, Perry's Moth and Freckle Lotion, which contains corrosive sublimate, the lotions for the skin are free from lead or other injurious metal.

3. That the enamels are composed of either carbonate of lime, oxide of zinc, or carbonate of lead, suspended in water. The first two classes of enamels are comparatively harmless, as harmless as any other white dirt when plastered over the skin to close the pores and prevent healthy action. On the other hand, the enamels composed of carbonate of lead are highly dangerous, and their use is very certain to produce disastrous results to those who patronize them.

4. The white powders for the skin are harmless, except in so

far as their application may interfere with the healthy action of the skin.

Respectfully submitted,
C. F. CHANDLER, PH. D.,
Chemist to the Metropolitan Board of Health.

Editorial.

THE advance of knowledge in medical science has tended to simplify the treatment of disease; compare the absurd compounds, consisting of hundreds of ingredients, in use one or two centuries since, with the relatively simple pharmacy of the present day. The progress of pathology has enabled us to select remedies known to have a positive influence over certain morbid states, whereas in the past the vague ignorance of the absolute condition of organs in disease, obliged practitioners to prescribe a multitude of drugs in the hope that some would be useful. What is so markedly true to-day will be still more apparent at the close of another half century. As we understand more fully the *mechanical* relations of disease, and the train of morbid molecular changes which characterize each, so will we more intelligently direct our medicaments to modify these variations in the direction of healthy action. Every physician should bear in mind that medicine is daily becoming more and more an exact science, and that it behooves him to appreciate and act with reference to this fact; otherwise he will be one of those late in the race, and also will often fail to afford the full measure of relief to the sick, which they have a right to expect and which he ought to know how to give.

One direction in which great progress has been made is in the recognition of the regular sequence of phenomena which occur in many acute diseases, forming a cycle through which they pass more or less constantly, and which generally tends to terminate in recovery of the normal functions. Many of the supposed effects of medication are now well known frequently to occur spontaneously, and indeed to have little relation to the course of treatment instituted. From the development of such truths, the expectant method of treating disease has been inaugurated. Doubtless this is often carried too far, and nature trusted to accomplish what art might do more quickly.

We believe that much medicine is worse than wasted by the rapidity with which dose after dose is emptied into the stomach, without regard to the length of time which must elapse before the element administered can reach, frequently through reflex nervous action, or chemical metamorphosis in the blood or glands, the tissue in which morbid changes are going on. Many of the functions of the human organism are carried on very slowly, as in the case of the sympathetic system twenty-four or forty-eight hours may elapse from the time a morbid impression is made until it manifests itself by signs and symptoms. We observe this constantly in acute inflammations, as of the lungs, pleura or peritoneum, the exciting cause always preceding by many hours the development of the disease. A similar law holds good in the action of many remedies, but forgetful of it, we often defeat our own ends by changing prescriptions before they can possibly have done their work. One of the worst habits which can be formed, it seems to us, is the one of frequent changing medicine. First, it is bad for the physician; it leads to a distrust of his own judgment, to undue impatience, and to unnecessary scepticism as regards the efficacy of treatment; it reacts badly upon the patient and his friends, if the medicine is changed every visit, it will very likely be thought either that the patient is not improving, or that the physician has not confidence in himself. A secondary consideration is that of expense, but among the indigent a serious one.

The physician who first carefully and skillfully makes out a diagnosis and then considering what means he possesses of meeting the indications, and the probable contingencies which may arise in the progress of the case, rationally prescribes according to the premises, regulating the quantity of the prescription to the probable time it will need to be continued, will rarely find it needful to throw away much medicine. Of course, unforeseen symptoms arise frequently, requiring new remedies, which no skill could anticipate, but such cases are the exception, and we think that much good will result to both doctors and their patrons if the former would always bear in mind the maxim, *Prescribe wisely, then trust your wisdom.*

DETROIT MEDICAL COLLEGE.

THE commencement exercises of the Detroit Medical College were held in the Opera House of this city, on Thursday evening, June 30. Notwithstanding the excessive heat and the portentous aspect of the sky, a large and select audience assembled at the appointed hour, manifesting, in a gratifying manner, the interest felt by the citizens of Detroit in the institution that has sprung up in their midst.

The exercises were opened with prayer by the Rev. George Worthington. The degree of Doctor of Medicine was then conferred, with the usual ceremony, upon the successful candidates, thirty-three in number. Before receiving their diplomas, the candidates gave their assent to the following oath, administered by the President of the faculty, Dr. E. W. Jenks:

"We, the graduates of the Detroit Medical College, realizing, as we do, the importance of a united purpose on the part of the members of the profession, in support of its dignity and purity, do hereby declare, that we enter upon the practice of our profession in good faith, with a determination that it shall be an honor to ourselves and a true benefit to those placed in our charge.

"We solemnly promise that the highest ultimate good to our patients shall be our constant rule of practice, and their secrets conveyed to us as medical advisers, be preserved with scrupulous care.

"That we will hold in reverence the sacredness of fœtal life, and discountenance, as far as lies in our power, those practitioners who are engaged in its wanton destruction.

"That our professional brethren shall be entitled to our kind assistance and support, and that whether as counselors or at the bedside, or members of the same community, it shall be our endeavor to display toward them, at all times, a generous magnanimity."

The address to the graduating class, delivered by Prof. Geo. P. Andrews, consisted of a few words of cordial welcome as well as of kindly counsel and advice to those about to enter upon the responsible and arduous duties of a professional life. Dr. J. B. Laing, of the graduating class, responded in an appropriate valedictory address. After speaking of the general scope and aim of medical research at the present day, he said:

"Therefore, we are not discouraged, classmates; as Americans we have no right to be discouraged. We do not now need the stamp of Paris or of Berlin upon our ideas. America to-day holds the surgical scepter of the world, and in the golden age that is predicted for our beloved and honored profession, it is not too much to hope that we may yet become pre-eminent in practical medicine. Great truths can only be reached by patient labor, talent and genius. And hundreds of young men, good and true, thoroughly educated, eminently scientific, abounding in industry and ambition and fidelity, are like so many bees busy at work in every town and city of this great land, collecting honey from every flower, and laying it up in the great storehouse of the profession. Never was there such talent, such genius, such patient labor, as there is at the present time among the medical men of the western world. Classmates, let us see to it that we are not laggards in the race. * * * *

"We have taken upon ourselves the responsibilities of a profession which demands the life work of its votaries. Full well do we know that though our lives must be full of toil and self-sacrifice, we can never hope to hear the plaudits of the multitude welcoming us from battle-fields in the pomp and circumstance of glorious war. Neither can we hope, in the pursuance of our legitimate professional duties, to see our names emblazoned in the annals of our country's history as statesmen. But we humbly hope that when we shall have passed the turmoil and the strife, our fellows may point to our lives as models of usefulness, benevolence and noble self-sacrifice."

He closed with a few words of affectionate farewell, in behalf of the class, to their late instructors.

Addresses followed by Hon. Philip J. D. VanDyke, Dr. Richard Inglis and Hon. Z. R. Brockway, which were all listened to with interest.

Music was furnished for the occasion by the Opera House band, under the able leadership of Prof. Bendix, and contributed not a little to the happy impression left upon the minds of the audience.

After the exercises in the Opera House, the students and recent graduates met the members of the faculty at the house of the President, for a social re-union before the final scattering to their homes. And thus pleasantly ended the second annual commencement of the Detroit Medical College.

The following is a list of the successful candidates for graduation:

N. F. Brown, Detroit.
C. L. Carroll, Williamsville, Ill.
J. H. Carstens, Detroit.
G. E. Catlin, Jaynesville, Wis.
F. E. Corbyn, Schoolcraft, Mich.
N. J. Cranmer, Breedsville, Mich.
Benjamin D'Arcy, Newbridge, Ont.
G. A. Foster, Ann Arbor, Mich.
F. A. Gary, Vernon, N. Y.
C. E. Hunt, Annapolis, Ind.
H. C. Kimball, Liberty, Mich.
E. H. King, West Liberty, Iowa.
J. B. Laing, Newberry, Vt.
L. F. Lindley, Paoli, Ind.
G. W. Lore, Danville, Ohio.
F. J. Mather, St. Mary's, Ohio.
Jas. McGurk, Mooretown, Ont.
J. L. McKeehan, New Bloomfield, Pa.
J. W. Mitchell, Knoxville, Iowa.

J. D. Merriman, Burton, Ohio.
J. W. Monaghan, Detroit.
James Mulhern, Lake View, Mich.
C. N. Pengra, Goodrich, Mich.
M. Pritchard, Dixon, Cal.
John Purcell, Leverings, Ohio.
F. M. Sime, Winona, Minn.
J. C. Smith, Tilsonburg, Ont.
N. H. Thompson, Royal Center, Ind.
C. V. Tyler, Flint, Mich.
L. T. Wells, Tilton, N. H.
M. White, Ann Arbor, Mich.
H. R. Wilder, Enosburg Falls, Vt.
W. H. Young, Brampton, Ont.

PERSONAL.—Dr. James F. Noyes, of this city, has been elected a member of the American Otological Society.

As we are going to press, news comes to us of the death of Joseph Hildreth, M. D., of Chicago, formerly of this city.

We have to record, also, this month, the death of the eminent German opthalmologist, Von Gräefe.

BOOK NOTICE.

ANATOMY, DESCRIPTIVE AND SURGICAL. By Henry Gray, F. R. S. The drawings by H. V. Carter, M. D. With an Introduction on General Anatomy and Development, by F. Holmes, M. A. Cantab. A new American, from the fifth English edition. Henry C. Lea publisher. Philadelphia. 1870.

Gray's Anatomy has been so long the standard of perfection with every student of anatomy that we need do no more than call attention to the improvement in the present edition. There have been various slight changes in the body of the work, but the chief point of interest is found in the addition of an extensive chapter upon general anatomy, which includes what was heretofore scattered through the body of the work, and also an account of the development of the ovum. This chapter will afford a very useful introduction to the study of microscopic anatomy, and renders the volume complete.

PAMPHLETS AND JOURNALS RECEIVED.

THE Bromides; their Physiological Effects and Therapeutic Uses. By Z. C. McElroy, M. D. From the author.

THE Transactions of the New York Academy of Medicine. 1870.

THE North American Lakes considered as Chronometers of Post-Glacial Time. By Prof. Edmund Andrews. Extract from the Transactions of the Chicago Academy of Sciences. Vol. II. From the author.

THE Treatment of Croup. By Fordyce Barber, M. D. From the author.

SIXTY-THIRD Annual Catalogue and Announcement of the College of Physicians and Surgeons, New York. 1870.

ANNUAL Catalogue and Circular of the Bellevue Hospital Medical College, city of New York. 1870–71.

ANNUAL Catalogue and Announcement of the Women's Medical College of the New York Infirmary, 128 Second avenue. 1871.

EIGHTH Annual Report of the officers of the Detroit House of Correction. 1870.

Harper's Weekly, Monthly and *Bazar*, New York. *Atlantic Monthly, Every Saturday, Our Young Folks, Good Health,* Boston. *Technologist*, New York. *American Journal of Science,* New Haven. *Little Corporal*, Chicago. *American Agriculturist,* New York. *Cultivator and Country Gentleman,* Albany. *Gardeners' Monthly*, Philadelphia. *Western Rural, Michigan Farmer, Peninsular Herald,* Detroit.

DETROIT
Review of Medicine and Pharmacy.

Vol. V. SEPTEMBER, 1870. No. 9.

CHEMICAL NOTATION.

By A. B. Lyons, M. D., Professor of Analytical Chemistry in Detroit Medical College.

It has happened often in the history of scientific progress, that the hypotheses which in one generation have stimulated research and pointed the way to important discoveries, have in the next repressed investigation or diverted it to the pursuit of some mirage of the imagination. Not wholly false, they have fulfilled their mission, giving to research a greater definiteness of aim, exacting a nicer accuracy in the observation of facts, and throwing gleams of light on what was before wholly obscure; but partially true, they have in the end biased the mind in judgment, and prejudiced the very senses in observation, holding out mocking *ignis fatuus* lights to bewilder and mislead, the eternal stars of truth shining on the while unheeded in the firmament above.

Centuries of wasted toil have taught investigators, at length, to hold lightly by theories, making them always strictly subservient to the acquisition of facts. They are recognized as important, nay, invaluable, aids to thought, systematizing the knowledge already acquired, and demanding continued inquiry, that the plan, symmetrical in design, may be carried out in full completeness of detail. Theory may, in a measure, supplement observation, but, till it is corroborated by the accumulated evidence of facts admitting no doubtful interpretation, conclusions based solely on theoretical considerations are to be accepted at best only provisionally. Such, at least, are the sound principles which science is endeavoring to establish. Practically, it is found difficult to abide by them. To say nothing of the human weakness that makes it impossible to adopt a hypothesis without accepting it *pro tanto* for truth, or of doing battle for even the shadow of an idea without the soul becoming enlisted in the cause, the hypotheses themselves, so far as they are at all influential, become insensibly incorporated into the very language and literature of science. Employed at first chiefly to render intelligible to the common mind scientific facts and discoveries, these conjectures of genius remain long inseparable from the truths they have brought home to the understanding.

Thus it happens that even the intelligent masses do not quite keep pace with the progress of scientific knowledge. They have to waste much time in fighting over again battles whose issues have been long since decided.

These thoughts have been suggested to us in reviewing the present state of chemical nomenclature, and more especially of the symbolic notation adopted by chemical writers. No one who has advanced beyond the merest rudiments of chemical knowledge can question the immense utility of a language of signs that shall express briefly, clearly and exactly the facts of a chemical process or the composition of a chemical compound. The system devised by Berzelius more than half a century ago, and adopted almost unanimously by chemists from that day to the present, leaves nothing to be desired, either in simplicity of design, or in facility of adaptation to the varying requirements of a progressive science.

Although the system was contrived with reference to a particular theory of the molecular constitution of chemical compounds, the fundamental principle on which it was based was that upon which the whole science of chemistry rests, viz., the law of uniform equivalent or combining proportions. Hence, whatever increased knowledge we may acquire in future of the collocation and arrangement of the ultimate atoms or molecules of matter, the details only of our symbolic notation will be modified thereby. Indeed, it is one chief advantage of this language of symbols that it enables us to explain, discuss and compare chemical hypotheses without the necessity of inventing a cumbersome and superfluous spoken nomenclature.

A few questions relating to the atomic weights of certain elements, and having, therefore, an important bearing upon the symbolic notation, have remained unsettled till within a very recent period. Even upon these long disputed points, however, chemists now pretty generally agree. As long as the doctors disagreed, it might be expected that the student would often be sorely perplexed. Symbols to which no uniform significance could be attached, could not but prove a source of endless confusion, at least to one not thoroughly acquainted with the subject. But now that those vexed questions are set at rest, we look to see this chaos brought to order. Yes, in due season; but after the storm we must not expect at once a placid sea; the rage of the the tempest has spent itself, indeed, but it lives still in the surging billows, and it shall be hours and days before the disturbed equilibrium shall be at last restored.

In due time we may hope for the universal adoption of a settled and definite plan of expressing chemical facts by symbols. At present, many authors, and among them the most of those who deal with the practical applications of chemical principles, adhere to the original notation of Berzelius, whilst a small number, including, however, very many influential names, adopt, without reserve, the modifications which the progress of chemical knowledge demands. Some progressive, but speculative writers, have increased the confusion already existing by proposing new systems both of nomenclature and notation, of their own invention; and others, again, adopting a plan of compromise, have made use, provisionally, of barred symbols or other similar devices to designate those elements whose atomic weight was incorrectly assumed by the older chemists. The last mentioned plan is perhaps, on the whole, the best, but it is evident that in the present state of chemical literature a knowledge both of the views held at present by chemical philosophers, and of the theories of their predecessors, is indispensable to the student.

It is to be presumed that all of our readers are familiar with that older system of chemical philosophy and chemical notation which is still taught in many of the schools and employed in the majority of our text books. The innovations that have recently been made upon that system, however, and the grounds therefor, are not so generally understood. As students, we were taught, for example, that the atomic number or weight of oxygen is eight. Now, we shall be told that, although eight parts of oxygen are chemically *equivalent* to one of hydrogen, the *atomic weight* of the former element is sixteen. A new distinction is to be made, then, between equivalent and atomic weights. A single atom of one element may, in fact, be replaced in a compound by two or more atoms of another element. Among elementary substances there are a certain number that are capable of replacing one another atom for atom, but which can never be replaced themselves by a greater number of atoms of any other element. Hydrogen, chlorine and potassium are examples of this class. They are distinguished as monatomic elements, or, briefly, monads; their equivalent numbers and atomic weights are identical; their atoms are said to be equivalent, or to possess a single unit of equivalency. Such atoms can unite among themselves only in pairs, hence these elements in combining with one another form invariably a single compound. A bi-chloride of potassium, therefore, is simply a chemical absurdity.

Another group of elements consist of those whose single atoms may replace by substitution two atoms of hydrogen or chlorine. These are known as diatomic elements or dyads. A dyad atom is, then, the chemical equivalent of two monad atoms, and its equivalent number is, of course, equal to one-half its atomic weight. A single dyad atom can unite only with two monad atoms, but there is no theoretical limit to the number of dyad atoms that may attach themselves to any molecular group.

If we examine now the compounds of oxygen, we shall be speedily convinced that it belongs to this latter group. When potassium is thrown upon water that compound is decomposed in such a manner that one-half only of its hydrogen is replaced by the metal, the resulting hydrate of potassa consisting of one equivalent each of potassium and hydrogen, and two equivalents of oxygen. By fusing the hydrate with an additional equivalent of potassium, the remainder of the hydrogen is expelled, an anhydrous oxide remaining. The molecule of water contains, therefore, two atoms of hydrogen that may be separately replaced by other monad atoms.

When water saturated with chlorine gas is exposed to light, hydrochloric acid is gradually formed and oxygen evolved; the water is, in effect, decomposed, but now we find that the whole of its oxygen is removed at once; no intermediate compound exists between water and hydrochloric acid. The composition of water, therefore, expressed in symbols, is $H_2 O$, not, as we have been accustomed to write, $H O$, and the atomic weight of oxygen is 16 rather than 8. This question settled with regard to oxygen, we must admit the force of similar reasoning respecting the other dyad elements; and it is a noteworthy circumstance that in assigning to these symbols a value double that which we have been accustomed to associate with them, we are only restoring them, in most instances to the significance originally attached to them by Berzelius himself.

It must not be supposed that the considerations that have been just stated are the only ones which have influenced chemists in fixing upon the true atomic weights of these elements. Isomerism, specific heat, vapor volumes, densities, have all been studied attentively, and the conclusions derived from these several sources coincide almost perfectly.

As chlorine and oxygen are types of the two groups of elements that have been briefly characterized above, so boron, carbon, nitrogen, and chromium may serve to represent the four remaining groups—the triads, tetrads, pentads and hexads. The triad atom is equivalent to three monads, the tetrad to four, etc. Elements of even equivalency, *i. e.* the dyads, tetrads and hexads, are called collectively artiads, while those of uneven equivalency, including the remaining groups, are designated as perissads. As a rule the *perissads retain the atomic weights* that have been assigned to them in years past, while those of *the artiads are doubled* by chemists of the present day.

The subjoined table, in which the elements are classified according to their atomicity, will enable the reader to compare the old combining numbers with the atomic weights at present accepted by chemists, and to verify the rule just stated:

Table of Elements according to their Present Classification, showing the Atomic Weights of older usage and those at present adopted.

	Old.	New.
MONADS.		
Hydrogen	1	1
Fluorine	19	19
Chlorine	35.5	35.5
Bromine	80	80
Iodine	127	127
Lithium	7	7
Sodium	23	23
Potassium	39.1	39.1
Rubidium	85.4	85.4
Cœsium	133	133
Silver	108	108
DYADS.		
Oxygen	8	16
Calcium	20	40
Strontium	43.8	87.6
Barium	68.5	137
Beryllium	4.7	9.4
Yttrium	30.8	61.7
Lanthanum	46.8	93.6
Didymium	47.5	95
Erbium	56.3	112.6
Thorinum	57.8	115.7
Magnesium	12	24
Zinc	32.6	65.2
Cadmium	56	112
Copper	31.7	63.4
Mercury	100	200
TRIADS.		
Boron	11	11
Gold	197	197
Thallium	204	204
TETRADS.		
Carbon	6	12
Silicon	14	28
Titanium	25	50
Tin	56	118
Aluminum	13.7	27.4
Zirconium	44.8	89.6
Rhodium	52.2	104.4
Ruthenium	52.2	104.4
Palladium	53.3	106.6
Platinum	98.7	197.4
Iridium	99	198
Osmium	99.6	199.2
Lead	103.5	207
Manganese	27.5	55
Iron	28	56
Cobalt	29.4	58.8
Nickel	29.4	58.8
Cerium	46	92
Indium	37	74
Uranium	60	120
PENTADS.		
Nitrogen	14	14
Phosphorus	31	31
Vanadium	51.2	51.2
Arsenic	75	75
Antimony	122	122
Bismuth	210	210
Niobium	47	94
Tantalum	68.8	182
HEXADS.		
Sulphur	16	32
Selenium	39.7	79.4
Tellurium	64	128
Chromium	26.1	52.2
Molybdenum	48	96
Tungsten	92	184

The question of atomic weights settled, the method of collocating symbols to express chemical compounds is a matter of minor consequence. It is extremely desirable that some uniform plan be adopted, at least to designate inorganic compounds. The dualistic system, founded upon an obsolete hypothesis, although convenient on some accounts and already firmly established in the language and usage of industrial chemistry, is no longer admissible. The plan of referring the molecular groups of all compounds to a few simple types, such as HCl, H_2O, H_3N, and H_4C, is gaining favor, but there is not as yet complete unanimity in the views of chemists with regard to the particular manner of the grouping of atoms in many compounds.

ON THE USE OF CARBONIC ACID WATER IN CERTAIN FORMS OF DYSPEPSIA.

By Dr. Lewis H. Watson, M. D., Grand Rapids.

By carbonic acid water I mean what is commonly sold in the shops as "soda water," a misnomer, of course, soda having nothing at all to do with it. It is simply water charged with carbonic acid gas under pressure.

The gas is commonly generated by the action of sulphuric acid upon marble dust. At the ordinary temperature of the atmosphere one volume of water absorbs one volume of gas. By doubling the pressure we nearly double the capacity of the water to take up the gas, but not quite; at seven atmospheres water absorbs about five volumes of gas. It also takes up rather more after remaining in contact with the gas for any length of time. In the composition of ordinary soda water the pressure of about ten or twelve atmospheres is used.

Carbonic acid water is brisk and sparkling, has a pungent taste, slightly reddens litmus. The sensation upon drinking is that of warmth, a prickling, tingling sensation. Taken into the stomach it produces an exhilarating effect upon the mind. It clears the head, renders the individual cheerful, quickens the pulse, allays thirst, arrests nausea and vomiting, diminishes excessive heat, and exercises a general cooling, equalizing effect upon the circulation.

Having used it for several years past in various obstinate dyspepsias, after all drugs and every dietetic plan had failed, and in most cases successfully, I feel justified in calling the attention of the profession to it, and in setting before them the result of my observations.

Dyspepsia is a protean monster and the "*bète noir*" of physicians. Any suggestions as to the treatment of the hydra-headed incubus I believe will be read with interest.

First on the list is that form known as acid dyspepsia, when there is an excessive secretion of the gastric juice, with a sensation of burning heat in the œsophageal tract, heartburn, accompanied with flushed face, headache, and occasional nausea and vomiting.

Second, what Golding Bird calls irritative dyspepsia, characerized by a capricious appetite, sensation of weight and fullness about the pit of the stomach after meals, tongue white and pasty, urine loaded with the phosphates or an excess of urea, despondency and depression of spirits so general as to invite suicidal fancies.

The third form is that of gastric catarrh, an excessive secretion of mucus in the stomach, accompanied by a sense of weight and tightness at the epigastrium, alternate constipation and diarrhœa, with the passage of undigested food in the faeces.

In these three forms of indigestion I find the carbonic acid water especially valuable as a curative agent. My plan of treatment is this: In the acid form of dyspepsia, I advise the patient to take a glass a half hour before each meal. It should be drunk slowly, with frequent stops. No syrups or cordials are to be used as flavorings. In the other two forms named, I direct a glassful to be taken immediately after meals. It should be drawn from a fountain lined with porcelain or block tin—porcelain is best. Its action is to increase the flow of saliva. It stimulates the gustatory nerves, increases the secretion of the gastric juice and the intestinal secretions.

Holding the mineral constituents of the food—lime, iron and magnesia—in solution, it facilitates their absorption. Its action upon the nerves of the stomach rendered irritable by being steeped for a long time in an excess of gastric juice, is that of an anæsthetic. It speedily removes that burning, itching sensation so many complain of in excessive acidity.

The late Sir J. Y. Simpson recommended its use in cases of metritis and endo metritis.

Carbonic acid gas has been used as a stimulant to ulcers and suppurating surfaces; it improves the quality of the discharge and retards putrefaction.

I infer that its action upon mucous surfaces generally, is that of a stimulant and tonic. In cases of excessive secretion of mucus in the stomach, enveloping the food with its slimy coating, and preventing its being digested, a glass taken two or three times a day will entirely remove this trouble, and immediate relief follows.

I am strongly of the opinion that the benefit derived by dyspeptics from drinking Vichy, Kissengen and Congress waters depends more upon the carbonic acid gas they contain than upon their mineral or alkaline constituents.

I might, also, state that in many kidney complaints, in gonorrhœa, urethretis, and all vesical troubles, the carbonic acid water will be found a useful adjuvant to the other treatment.

PARACENTESIS MEMBRANÆ TYMPANI, WITH AN ILLUSTRATIVE CASE.

By J. F. Noyes, M. D., Professor of Ophthalmology and Aural Surgery in the Detroit Medical College.

The operation of puncturing the drum of the human ear comes down to us from a remote date in history. The operation was first performed on a human subject in Paris by a traveling quack or miracle-worker, named Eli, a little more than a century ago. Willis, Valsalva and others had previously made the experiment on dogs.

The operation was soon thereafter made in other parts of Europe. Himley introduced it into Germany, and first performed the operation of paracentesis tympani on a deaf person in 1806. It was performed also about that time in England, by Sir Astley Cooper.

History shows that in the early part of the present century the operation was quite frequently performed in Europe for the cure of deafness. Very soon, however, it fell into neglect on account of the rarity of any permanent benefits from it. Subsequently, the operation was revived in France, and very much practiced by Deleau Manière and Bonnafonte. In Germany it met with less favor, and was seldom undertaken until quite recently, when, in 1863, Gruber, of Vienna, advised the operation called "Myringodectomy," or the excision of a portion of the membrana tympani, as a cure for impaired hearing and tinnitus aurium.

The operation is not at all difficult when the meatus is not obstructed or swollen. Usually, it is very easy to make an opening in the drum, and many of the complicated instruments devised for this operation may be considered to be superfluous. Great care should be taken that no injury be done to the middle ear or fenestrae. Desmarres' knife, devised for paracentesis of the cornea, is equally serviceable for the performance of this operation, or a delicate knife slightly bent near its point, resembling an iridectomy knife, may be used. With the latter instrument the operator will be better enabled, also, to cut out, when undertaken, a piece from the thickened and resisting membrana tympani. The handle of the instrument used should also be very slender, so that it may not, by filling up too much the meatus, obstruct a view of the drum at the moment of operating. I have found Holcomb's tympanum knife, devised for this purpose, very serviceable. The operation generally occasions a considerable amount of pain, which lasts, however, for a very short time. Where the membrana tympani is very much distended and bulges forward like a little sack, the operation causes no pain whatever. In rare cases, says Roosa, does very severe reaction follow a paracentesis.

Writers upon aural surgery enumerate a number of indications for performing the operation. Schwartze recommends it in simple acute catarrh, when the accumulation is so great in the middle ear that the "membrana tympani is bulged out like a little vesicle." The accumulated secretion, in consequence of its extreme tenacity, can not escape through the Eustachian; nor is the air douche sufficient to drive it out through the tube. Its long continuance in the cavity of the tympanum often causes permanent changes in the organ. In such a case, the membrane often appears yellow, from shining through of the secretion, and it fluctuates on contact with a probe, and the drum, thus distended, is not in the least sensitive. The incision, in such a case, says Schwartze, should be from one to two lines in length; a simple puncture is not sufficient. He does not, however, approve of the operation when there is a *slight* amount of tenacious mucus in the cavity of the tympanum; because he considers that these small collections are seldom or never evacuated through the opening, and the paracentesis, in such cases, often occasions "very severe reaction; active inflammation is induced, which terminates in suppuration and loss of all hearing." Paracentesis of the membrana tympani, he considers also very useful "in certain cases of acute inflammation of the membrana tympani, when, in a very short time, a very great swelling of the usually dark bluish red tissue occurs, chiefly and greatest in the posterior and upper quadrant, and when, in spite of the use of other remedies, there is a very obstinate and severe pain. It quiets the pain, and thus shortens the course of the affection."

The operation has been advised and praticed in cases of impermeable stricture of the mouth of the Eustachian, "that is, a true adhesion of the walls of the canal." This indication is regarded, however, as not very important, since, on the one hand, observation confirms the extreme rarity of such an occurrence; on the other hand, it is extremely improbable that closure of the tube should exist for any length of time without leading to very great pathological changes in the middle ear, from retention of the secretion, and the permanent increase in the hydrostatic pressure in the cavity of the tympanum and the labyrinth, which would prevent any result from the operation.—(Von Tröllsch). We would certainly be justified, however, he continues, in making an explorative puncture of the membrana tympani in those cases where, from repeated examinations with the catheter and bougie, we must believe that the existence of an adhesion of the walls of the canal is very probable.

In proof of its extreme infrequency, we simply state that Lindenbaum has yet been able to collect in the "Archiv für Orenheilkunde" only four authentic cases of closure of the pharyngeal orifice of the tube, and these were usually produced by cicatrization from syphilitic ulcers.

Wild was the first to propose paracentesis of the membrana tympani for very troublesome tinnitus aurium. He was led to suggest it from having observed that in cases where the membrane was perforated it was only rarely that we met with persistant and very troublesome tinnitus. Schwartze says he carried out the indication in practice, and has perforated the drum very many times without any decided result. In only one case was the noise considerably lessened after the cicatrization of the portion that had been incised. The principle difficulty appears to be in keeping it open for any length of time after the paracentesis has been made.

Bonnefont performed paracentesis on one patient twenty-five times within three years, without succeeding in keeping an opening ever longer than three months. The short duration of any improvement does not, it appears to us, warrant at present the continuance of this operation.

Voltolini, of Breslau, has recently employed the galvano-caustic apparatus for the purpose of perforating the membrana tympani, but with what success we know not. In the first case in which Voltolini performed the operation, it is reported that the deafness was absolute and there were very troublesome head symptoms—heaviness and tinnitus. Only the noise in the ears was relieved by the operation.

In impairment of hearing, occasioned by thickening and inelasticity of the membrana tympani, which has thus become an impediment to the conduction of sound, it is authoritatively stated that paracentesis may also be of value. But, says Mr. Wild, very frequently the thickening which we observe on the membrana tympani is only a part of a general thickening and disorganization of the whole membrane of the middle ear, which is hidden from view. Under such circumstances it is plain that making a hole in the membrana tympani can cause no benefit to the hearing.

The value and necessity of this operation is at once unmistakable when there is a filling up of the tympanum with a secretion which can not escape through the natural passage to the middle ear; as, for instance, when pus is formed, the result of inflammation; here the indication is as clear as that for opening an abscess in any other part of the body; we thereby save the patient very much pain and a slighter loss of substance than when we leave the opening to nature. The artificial opening thus made in the drum heals more certainly and readily than where a spontaneous evacuation of an abcess of the middle ear occurs. The prognosis, also, for the restoration of hearing will be more favorable the shorter the period during which the middle ear has been filling up and the hyperæmic swelling and puffiness of the mucous membrane remains. The operation is all the more imperative, as Tröllsch remarks, in cases where the membrana tympani has become thickened on account of previous disease, the probability of a spontaneous opening being thereby very much lessened. Such cases not unfrequently end in death. Paracentesis done at the proper time, will prevent the inflammation from extending to the membranes of the brain, and thus may actually save life.

The following case, which came under my observation and care a few years since, may serve to illustrate and enforce the importance of the operation in like cases:

A robust mechanic came from the Upper Peninsula to consult me on account of great pain, with total loss of hearing in right ear. He had had an attack of sore throat for some time before he left his home to put himself under my care. It is not improbable that the otitis media, which had caused the great suffering in the ear and on that side of the head, had been produced by the inflammation in the throat, extending to the cavity of the tympanum through the Eustachian canal, though when he applied little or no inflammation of the pharynx was apparent. An examination of the ear with Toynbee's speculum, under the direct rays of the sun, revealed the membrana tympani very much thickened and injected, with large blood vessels coursing across it and bulging forward, as described by Schwartze, like a little sac. The pressure occasioned by the secretion thus pent up in the middle ear, with the unyielding condition of the drum, had produced the most intense pain; so severe was it, according to his own account, that at one time he feared he should lose his reason. Choosing Holcomb's tympanum knife, I made an incision of from one to two lines in length in the the upper and posterior segment of the membrane. There immediately exuded a considerable quantity of thick and very tenacious yellowish fluid; more was forced out by Valsalva's method. The relief from the pain was almost immediate. In order to make sure in cleansing out the middle ear, I next introduced the Eustachian catheter through the nose, and syringed it out with tepid water. The incision was kept open for a number of days by practicing Valsalva's method of forcing air through the Eustachian and inflating the cavity of the tympanum. No more secretion was observed to come out from the opening, and in a short time it healed up, and the drum took on a healthier appearance; but little or no hearing, without contact, had returned when he left for his home.

It is not unlikely that had this operation been performed in season, or before the organ of the middle ear had sustained permanent injury, it might have resulted in entire restoration of hearing.

In thus relating the indications for performing paracentesis membranæ tympani, with the successful and unsuccessful cases laid down in connection with the history of the operation, taken from writers on aural surgery and our own case, we have been actuated by a desire of aiding our readers engaged in general practice of medicine in making out a correct diagnosis and selecting the cases suited to and urgently demanding the operation, and applying the treatment.

"Deafness is so distressing an infirmity, and when of long standing is so incurable, that we can not too strongly urge all medical practitioners to make themselves familiar with the treatment of the diseases of the ear. They should also encourage their patients to apply themselves to them for relief of *slight* and incipient ailments in this organ instead of allowing them to go on till they become permanently deaf, and then letting them fruitlessly seek relief from ignorant and mercenary quacks."—(Druit's Surgeons' Vade Mecum.)

Selections.

ON THE RELATIONS BETWEEN BODY AND MIND.

By Henry Maudsley, M. D., F. R. C. P.

LECTURE I—PART II.

(Concluded from page 356.)

As it is with memory so it is with volition, which is a physiological function of the supreme centres, and which, like memory, becomes more unconscious and automatic the more completely it is organized by repeated practice. It is not man's function in life to think and feel only; his inner life he must express or utter in action of some kind—in word or deed. Receiving the impressions from nature, of which he is a part, he reacts upon nature intelligently, modifying it in a variety of ways; thus nature passes through human nature to a higher evolution. As the spinal cord reacts to its impressions in excito-motor action, and as the sensory centres react to their impressions in sensori-motor action, so, after the complex interworking and combination of ideas in the hemispherical ganglia, there is, in like manner, a reaction or desire of determination of energy outwards, in accordance with the fundamental property of organic structure to seek what is beneficial and shun what is hurtful to it. It is this property of tissue that gives the impulse which, when guided by intelligence, we call volition, and it is the abstraction from the particular volition which metaphysicians personify as *the will*, and regard as their determining agent. Physiologically, we cannot choose but reject *the* will; volition we know, and will we know, but *the will*, apart from particular acts of volition or will, we cannot know. To interpose such a metaphysical entity between reflection and action thereupon, would bring us logically to the necessity of interposing a similar entity between the stimulus to the spinal cord and its reaction. Thus, instead of unraveling the complex by help of the more simple, we should obscure the simple by speculations concerning the complex. As physiologists we have to deal with volition as a function of the supreme centres, following reflection, varying in quantity and quality as its cause varies, strengthened by education and exercise, enfeebled by disuse, decaying with decay of structure, and always needing for its outward expression the educated agency of the subordinate motor centres. We have to deal with will, not as a single undecomposable faculty unaffected by bodily conditions, but as a result of organic changes in the supreme centres, affected as certainly and seriously by disorder of them as our motor faculties are by disorder of their centres. Loss of power of will is one of the earliest and most characteristic symptoms of mental derangement; and, whatever may have been thought in times past, we know well now that the loss is not the work of some unclean spirit that has laid its hands upon the will, but the direct effect of physical disease.

But I must pass on now to other matters, without stopping to unfold at length the resemblances between the properties of the supreme centres and those of the lower nerve centres. We see that the supreme centres are educated, as the other centres are, and the better they are educated the better do they perform the functions of thinking and willing. The development of mind is a gradual process of organization in them. Ideas, as they are successively acquired through the gateways of the senses, are blended and combined and grouped in a complexity that defies analysis, the organic combinations being the physiological conditions of our highest mental operations—reflection, reasoning and judgment. Two leading ideas we ought to grasp and hold fast: first, that the complex and more recondite phenomena of mind are formed out of the more simple and elementary by progressive specialization and integration; and, secondly, that the laws by means of which this formation takes place are not laws of association merely, but laws of organic combination and evolution. The growth of mental power means an actual addition of structure to the intimate constitution of the centres of mind—a *mental organization* in them; and mental derangement means disorder of them, primary or secondary, functional or organic.

Although I have declared the hemispherical ganglia to be preeminently the mind centres, and although it is in disorder of their functions—in disordered intelligence, in disordered emotion, and in disordered will—that insanity essentially consists, it is nevertheless impossible to limit the study of our mental operations to the study of them. They receive impressions from every part of the body, and there is reason to believe, exert an influence on every element of it; there is not an organic motion, sensible or insensible, which does not, consciously or unconsciously, affect them, and which they in turn do not, consciously or unconsciously affect. So intimate and essential is the sympathy between all the organic functions, of which mind is the crown and consummation, that we may justly say of it that it sums up and comprehends the bodily life—that everything which is displayed outwardly is contained secretly in the innermost. We cannot truly understand mind functions without embracing in our inquiry all the bodily functions and features.

I have already shown this in respect of motor functions, by exhibiting how entirely dependent for its expression will is upon the organized mechanism of the motor centres—how, in effecting voluntary movements, it presupposes the appropriate education of the motor centres. Few persons, perhaps, consider what a wonderful art speech is, or even remember that it is an art which we acquire. But it actually costs us a great deal of pains to learn to speak; all the language which an infant has is a cry; and it is only because we begin to learn to talk when we are very young, and are so constantly practicing, that we forget how specially we have had to educate our motor centres of speech. Here, however, we come to another pregnant consideration; the acquired faculty of the educated motor centre is not only a necessary agency in the performance of a voluntary act, but I maintain that it positively enters as a mental element into the composition of the definite volition; that, in fact, the specific motor faculty not only acts downwards upon the motor nerves, thus effecting the movement, but also acts upwards upon the mind centres, thereby giving to consciousness the conception of the suitable movement—the appropriate motor intuition. It is certain that, in order to execute consciously a voluntary act, we must have in the mind a conception of the aim or purpose of the act. The will cannot act upon the separate muscles, it can only determine the result desired; and thereupon the combined contraction, in due force and rapidity, of the separate muscles takes place in a way that we have no consciousness of, and accomplishes the act. The infant directly it is born can suck, certainly not consciously or voluntarily; on the first occasion, at any rate, it can have no notion of the purpose of its movements; but the effect of the action is to excite in the mind the special motor intuition, and to lay the foundation of the special volition of it. We cannot do an act voluntarily unless we know what we are going to do, and we cannot *know exactly* what we are going to do until we have taught ourselves to do it. This exact knowledge of the aim of the act, which we get by experience, the motor intuition gives us.

The essential intervention of the motor intuition, which is, as it were, the abstract of the movement, in our mental life, is best illustrated by the movements of speech, but is by no means peculiar to them. Each word represents a certain association and succession of muscular acts, and is itself nothing more than a conventional sign or symbol to mark the particular muscular expression of a particular idea. The word has not independent vitality; it differs in different languages; and those who are deprived of the power of articulate speech must make use of other muscular acts to express their ideas, speaking, as it were, in a dumb discourse. There is no reason on earth, indeed, why a person might not learn to express every thought which he can utter in speech by movements of his fingers, limbs and body —by the silent language of gesture. The movements of articulation have not, then, a special *kind* of connection with the mind, though their connection is a specially intimate one; they are simply the most convenient for the expression of our mental states, because they are so numerous, various, delicate, and complex, and because, in conjunction with the muscles of the larynx and the respiratory muscles they modify sound and thus make audible language. Having, on this account, been always used as the special instruments of utterance, their connection with thought is most intimate; the Greeks, in fact, used the word λογος to mean both reason and speech. But this does not make the relations of the movements of speech to mind different fundamentally from the relations of other voluntary movements to mind; and we should be quite as much warranted in speaking of a special faculty of writing, of walking, or of gesticulating in the mind, as of speaking of a special faculty of speech there.

What is true of the relations of articulate movements to mental states is true of the relations of other movements to mental states; they not only express the thought, but, when otherwise put in action, they can excite the appropriate thought. Speak the word, and the idea of which it is the expression is aroused, though it was not in the mind previously; or put other muscles than those of speech into an attitude which is the normal expression of a certain mental state, and the latter is excited. Most, if not all men, when thinking, repeat internally, whisper to themselves, as it were, what they are thinking about; and persons of dull and feeble intelligence cannot comprehend what they read, or what is said to them sometimes, without calling the actual movement to their aid, and repeating the words in a whisper or aloud. As speech has become the almost exclusive mode of expressing our thoughts, there not being many gestures of the body which are the habitual expressions of simple ideas, we cannot present striking examples of the powers of other movements to call up the appropriate ideas; yet the delicate movements of the accommodation of the eye to vision at different distances, seem really to give to the mind its ideas of distance and magnitude. No one actually sees distance and magnitude; he sees only certain signs from which he has learned to judge intuitively of them—the muscular adaptations, though he is unconscious of them, imparting the suitable intuitions.

The case is stronger, however, in regard to our emotions. Visible muscular expression is to passion what language (or audible muscular expression) is to thought. Bacon rightly, therefore, pointed out the advantages of a study of the forms of expression. "For," he says, "the lineaments of the body do disclose the disposition and inclination of the mind in general; but the motions of the countenance and parts do not only so, but do futher disclose the present humor and state of the mind or will." The muscles of the countenance are the chief exponents of human feeling, much of the variety of which is due to the action of the orbicular muscles. Animals cannot laugh, because, besides incapable of ludicrous ideas, they do not possess in sufficient development the orbicular muscle of the lips and the straight muscles which act upon them. It is because of the superadded muscles and of their combined actions—not combined contraction merely, but consentaneous action, the relaxation of some accompanying the contraction of others—that the human countenance is capable of expressing a variety of more complex emotions than animals can. Those who would degrade the body, in order, as they imagine, to exalt the mind, should consider more deeply than they do the importance of our muscular expressions of feeling. The manifold shades and kinds of expression which the lips present—their gibes, gambols, and flashes of merriment; the quick language of a quivering nostril; the varied waves and ripples of beautiful emotion which play on the human countenance, with the spasms of passion that disfigure it—all which we take such pains to embody in art—are simply effects of muscular action, and might be produced by electricity or any other stimulus, if we could only apply it in suitable force to the proper muscles. When the eye is turned upwards in rapt devotion, in the ecstasy of supplication, it is for the same reason as it is rolled upwards in fainting, in sleep, in the agony of death; it is an involuntary act of the oblique muscles, when the straight muscles cease to act upon it. We perceive, then, in the study of muscular action, the reason why man looks up to heaven in prayer, and why he has placed there the power "whence cometh his help." A simple property of the body, as Sir C. Bell observes—the fact that the eye in supplication takes what is its natural position when not acted upon by the will—has influenced our conceptions of heaven, our religious observances, and the habitual expression of our highest feelings.

Whether each passion which is special in kind has its special bodily expression, and what is the expression of each, it would take me too long to examine now. Suffice it to say that the special muscular action is not merely the exponent of the passion, but truly an essential part of it. Fix the countenance in the pattern of a particular emotion—in a look of anger, wonder or scorn—and the emotion whose appearance is thus imitated will not fail to be aroused. And if we try, while the features are fixed in the expression of one passion, to call up in the mind a quite different one, we shall find it impossible to do so. This agrees with the experiments of Dr. Braid on persons whom he had put into a state of hypnotism; for when the features or the limbs were made by him to assume the expression of a particular emotion, thereupon the emotion was actually felt by the patient, who began to act as if he was under its influence. We perceive, then, that the muscles are not alone the machinery by which the mind acts upon the world, but that their actions are essential elements in our mental operations. The superiority of the human over the animal mind seems to be essentially connected with the greater variety of muscular action of which man is capable;

were he deprived of the infinitely varied movements of hands, tongue, larynx, lips and face, in which he is so far ahead of the animals, it is probable that he would be no better than an idiot, notwithstanding he might have a normal development of brain.

If these reflections are well grounded, it is obvious that disorder of the motor centres may have, as I believe it has, no little effect upon the phenomena of mental derangement. In some cases of insanity there are genuine muscular hallucinations, just as there are in dreams, when the muscles are in a constrained attitude; and where the morbid effects are not so marked, there is good reason to suppose that a searching inquiry along this almost untroddon path will disclose the mode of generation of many delusions that seem now almost inexplicable.

But we cannot limit a complete study of mind even by a full knowledge of the functions of the nervous and muscular systems. The organic system has most certainly an essential part in the constitution and functions of mind. In the great mental revolution caused by the development of the sexual system at puberty we have the most striking example of the intimate and essential sympathy between the brain as a mental organ and other organs of the body. The change of character at this period is not by any means limited to the appearance of the sexual feelings and their sympathetic ideas, but when traced to its ultimate reach, will be found to extend to the highest feelings of mankind, social, moral, and even religious. In its lowest sphere, as a mere animal instinct, it is clear that the sexual appetite forces the most selfish person out of the little circle of self-feeling into a wider feeling of family sympathy and a rudimentary moral feeling. The consequence is that, when an individual is sexually mutilated at an early age, he is emasculated morally as well as physically. Eunuchs are said to be the most depraved creatures morally; they are cowardly, envious, liars, utterly deceitful, and destitute of real social feeling. And there is certainly a characteristic variety of insanity caused by self-abuse, which makes the patient very like a eunuch in character.

It has been affirmed by some philosophers that there is no essential difference between the mind of a woman and that of a man; and that if a girl were subjected to the same education as a boy, she would resemble him in tastes, feelings, pursuits and powers. To my mind it would not be one whit more absurd to affirm that the antlers of the stag, the human beard, and the cock's comb are the effects of education; or that, by putting a girl to the same education as a boy, the female generative organs might be transformed into male organs. The physical and mental differences between the sexes intimate themselves very early in life, and declare themselves most distinctly at puberty; they are connected with the influence of the organs of generation. The forms and habits of mutilated men approach those of women;

and women whose ovaries and uterus remain, from some cause, in a state of complete inaction, approach the forms and habits of men. It is said, too, that in hermaphrodites the mental character, like the physical, participates equally of that of both sexes. While woman preserves her sex, she will necessarily be feebler than man, and, having her special bodily and mental characters, will have, to a certain extent, her own sphere of activity; where she has become thoroughly masculine in nature, or hermaphrodite in mind—when, in fact, she has pretty well divested herself of her sex—then she may take his ground and do his work; but she will have lost her feminine attractions, and probably, also her chief feminine functions.

Allowing that the chief generative functions have their specific effect upon the mind, the question occurs whether each of the internal organs has not also a special effect, giving rise to particular feelings with their sympathetic ideas. They are notably united in the closest sympathy, so that, although insensible to touch, they have a sensibility of their own, by virtue of which they agree in a consent of functions, and respond more or less to one another's sufferings; and there can be no question that the brain, as the leading member of this physiological union, is sensible of, and affected by, the conditions of·its fellow members. We have not the same opportunity of observing the specific effects of other organs that we have in the case of the generative organs; for while those come into functional action directly after birth, these come into action abruptly at a certain period, and thus exhibit their specific effects in a decided manner. It may well be, however, that the general uniformity among men in their passions and emotions is due to the specific sympathies of organs, just as the uniformity of their ideas of external nature is due to the uniform operation of the organs of sense.

It is probable that an exact observation of the mental effects of morbid states of the different organs would help the inquiry into the feelings and desires of the mind which owe their origin to particular organs. What are the psychological features of disease of the heart, disease of the lungs, disease of the liver? They are unquestionably different in each case. The inquiry, which has never yet been seriously attempted, is, without doubt, a difficult one, but I believe that the phenomena of dream might, if carefully observed, afford some help. The ground-tone of feeling is a dream, the back ground on which the phantoms move, is often determined by the state of an internal organ, the irritation of which awakens into some degree of activity that part of the brain with which the organ is in specific sympathy; accordingly, sympathetic ideas spring out of the feeling and unite in a more or less coherent dream drama. How plainly this happens in the case of the generative organs it is unnecessary to point out: exciting their specific dreams, they teach a lesson concerning physiological sympathies which, applied to the observation of the effects of other organs, may be largely useful in the interpretation, not of dreams only, but of the phenomena of insanity. Dreams furnish a particularly fruitful field for the study of the specific effects of organs on mind, because these are more distinctly felt and more distinctly declared when the impressions from the external sense are shut out by sleep. As the stars are not visible, although they still shine, in the day time, so the effects of an internal organ may not be perceptible during the waking state while consciousness is actively engaged. But just as, when the sun goes down, the stars shine visibly, which before were invisible, veiled by his greater light, so when active consciousness is suspended, organic sympathies, which before were insensible, declare themselves in the mind. Perhaps it is in the excitation of its sympathetic feeling and ideas by a disordered organ during sleep that we may discover the explanation of a fact which seems to be undoubted, and to be more than accidental—namely, that a person has sometimes dreamed prophetically that he would have a particular internal disease, before he consciously felt a symptom of it, and has been aftewards surprised to find his dream come true.

It is natural to suppose that the passion which a particular organ produces in the mind will be that which, when otherwise excited, discharges itself specially upon that organ. Notably this is the case with the sexual organs and the passion to which they minister. When we consider the effects which a sanguine anticipation, or the elation of a present excitement, has upon the lungs—the accelerated breathing and the general bodily exhilaration which it occasions, we cannot help thinking of the strange hopefulness and the sanguine expectations of the consumptive patient, who, on the edge of the grave, projects, without a shadow of distrust, what he will do long after he will have been "green in death and festering in his shroud." Observe how fear strikes the heart, and what anxious fear and apprehension accompany some affections of the heart. Anger, disappointment, and envy notably touch the liver; which, in its turn, when deranged, engenders a gloomy tone of mind through which all things have a malignant look, and from which, when philosophy avails not to free us, the restoration of its functions will yield instant relief. The internal organs are plainly not the agents of their special functions only, but, by reason of the intimate consent or sympathy of functions, they are essential constituents of our mental life.

The time yet at my disposal will not allow me to do more than mention the effects of mental states on the intimate processes of nutrition and secretion. Emotion may undoubtedly favor, retard or pervert nutrition, and increase, lessen or alter a secretion; in doing which there is reason to think that it acts, not only by dilating or contracting the vessels through the vaso-motor system, as we witness in the blush of shame and the pallor of fear, but also directly on the organic elements of the part through the nerves, which, as the latest researches seem to show, end in them sometimes by continuity of substance. If they do so end, it is difficult to conceive how a strong emotion vibrating to the ultimate fibrils of a nerve can fail to effect for a moment or longer the functions of the organic elements. Be this so or not, however, the familiar observations—first, that a lively hope or joy exerts an enlivening effect upon the bodily life, quiet and equable when moderate, but, when stronger, evinced in the brilliancy of the eye, in the quickened pulse and respiration, in an inclination to laugh and sing; and, secondly, that grief or other depressing passion has an opposite effect, relaxing the arteries, enfeebling the heart, making the eye dull, impeding digestion, and producing an inclination to sigh and weep—these familiar observations of opposite effects indicate the large part which mental states may play, not in the causation of all sorts of disease alone, but in aiding recovery from them. A sudden and great mental shock may, like a great physical shock, and perhaps in the same way, paralyze for a time all the bodily and mental functions, or cause instant death. It may, again, produce epilepsy, apoplexy or insanity; while a prolonged state of depression and anxiety is sometimes an important agent in the causation of chronic disease, such as diabetes and heart disease. Can it be doubted, too, that the strong belief that a bodily disorder will be cured by some appliance, itself innocent of good or harm, may so affect beneficially the nutrition of the part as actually to effect a cure? To me it seems not unreasonable to suppose that the mind may stamp its tone, if not its very features, on the individual elements of the body, inspiring them with hope and energy, or infecting them with despair and feebleness. A separated portion of the body, so little that our naked eye can make nothing of it, the spermatozoon of the male and the ovum of the female, does at any rate contain, in a latent state, the essential characters of the mind and body of the individual from whom it has proceeded; and as we are utterly ignorant how this mysterious effect is accomplished, we are certainly not in a position to deny that what is true of the spermatozoon and ovum may be true of other organic elements. And if this be so, then those who profess to discover the character of the individuals in the character of the nose, the hand, the features, or other part of the body, may have a foundation of truth for speculation which are yet only vague, fanciful, and valueless.

Perhaps we do not, as physicians, consider sufficiently the influence of mental states in the production of disease, and their importance as symptoms, or take all the advantages which we might take of them in our efforts to cure it. Quackery seems to have here got hold of a truth which legitimate medicine fails to appreciate and use adequately. Assuredly the most successful physician is he who, inspiring the greatest confidence in his remedies, strengthens and exalts the imagination of his patient; if he orders a few drops of peppermint-water with the confident air of curing the disease, will he not really do more sometimes for the patient than one who treats him in the most approved scientific way, but without inspiring a conviction of recovery? Ceremonies, charms, gesticulations, amulets, and the like, have, in all ages and among all nations, been greatly esteemed and largely used in the treatment of disease; and it may be speciously presumed that they have derived their power, not from any contract with the supernatural, but, as Bacon observes, by strengthening and exalting the imagination of him who used them. Entirely ignorant, as we are, and probably ever shall be, of the nature of mind, groping feebly for the laws of its operation, we certainly cannot venture to set bounds to its power over those intimate and insensible molecular movements which are the basis of all our visible bodily functions, any more than we can justly venture to set bounds to its action in the vast and ever-progressing evolution of nature, of which all our thoughts and works are but a part. This much we do know: that as, on the one hand, in the macrocosm of nature, it is certain that the true idea once evolved is imperishable—that it passes from individual to individual, from nation to nation, from generation to generation, becoming the eternal and exalting possession of man; so, on the other hand, in the microcosm of the body, which some ignorantly despise, there are many more things in the reciprocal action of mind and organic element than are yet dreamt of in our philosophy.

RIP VAN WINKLE, M. D.

By Dr. Oliver Wendell Holmes, Boston, Massachusetts.

AN AFTER DINNER PRESCRIPTION TAKEN BY THE MASSACHUSETTS MEDICAL SOCIETY, AT THEIR MEETING HELD MAY 25, 1870.

CANTO FIRST.

Old Rip Van Winkle had a grandson, Rip,
Of the paternal block a genuine chip;
A lazy, sleepy, curious kind of chap;
He, like his grandsire, took a mighty nap,
Whereof the story I propose to tell
In two brief cantos, if you listen well.

The times were hard when Rip to manhood grew;
They always will be when there's work to do;
He tried at farming—found it rather slow—
And then at teaching—what he didn't know;

Then took to hanging 'round the tavern bars;
To frequent toddies and long-nine cigars,
Till Dame Van Winkle, out of patience, vexed
With preaching homilies, having for their text
A mop, a broomstick—aught that might avail
To point a moral or adorn a tale,
Exclaimed—" I have it! Now then, Mr. V.!
He's good for *something*—make him an M. D."!

The die was cast; the youngster was content;
They packed his shirts and stockings, and he went.
How hard he studied it were vain to tell—
He drowsed through Wistar, nodded over Bell,
Slept sound with Cooper, snored aloud with Good;
Heard heaps of lectures—doubtless understood—
A constant listener, for he did not fail
To carve his name on every bench and rail.

Months grew to years; at last he counted three,
And Rip Van Winkle found himself M. D.
Illustrious title! in a gilded frame
He set the sheepskin with his Latin name,
Ripum Van Winklum, quem we—scimus—know
Idoneum esse—to do so and so;
He hired an office; soon its walls displayed
His new diploma and his stock in trade,
A mighty arsenal to subdue disease
Of various names, whereof I mention these:
Lancets and bougies, great and little squirt,
Rhubarb and Senna, Snakeroot, Thoroughwort,
Ant. Tart., Vin. Colch., Pil Cochiæ and Black Drop,
Tinctures of Opium, Gentian, Henbane, Hop,
Pulv. Ipecacuanhæ, which for lack
Of breath to utter men call Ipecac,
Camphor and Kino. Turpentine, Tolu,
Cubebs, "Copeevy," Vitriol—white and blue,
Fennel and Flaxseed, Slippery Elm and Squill,
And roots of Sassafras and "Sassaf'rill,"
Brandy—for colics—Pinkroot, death on worms—
Valerian, calmer of hysteric squirms,
Musk, Assafœtida, the resinous gum
Named from its odor—well, it does smell some—
Jalap, that works not wisely but too well,
Ten pounds of bark and six of Calomel.

For outward griefs he had an ample store,
Some twenty jars and gallipots, or more:
Ceratum simplex—housewives oft compile
The same at home, and call it "wax and ile;"

Unguentum Resinosum—change its name,
The "drawing salve" of many an ancient dame;
Argenti Nitras, also Spanish flies,
Whose virtue makes the water-bladders rise—
(Some say that spread upon a toper's skin
They draw no water, only rum or gin)—
Leeches, sweet vermin! don't they charm the sick?
And Sticking-plaster—how it hates to stick!
Emplastrum Ferri—ditto *Picis*, Pitch;
Washes and Powders, Brimstone for the——which,
Scabies or *Psora*, is thy chosen name
Since Hahnemann's goosequill scratch'd thee into fame,
Proved thee the source of every nameless ill,
Whose sole specific is a moonshine pill,
Till saucy science, with a quiet grin,
Held up the Acarus, crawling on a pin?
Mountains have labored and have brought forth mice:
The Dutchman's theory hatched a brood of—twice
I've well nigh said them—words unfitting quite
For these fair precincts and for ears polite.

The surest foot may chance at last to slip,
And so at length it proved with Dr. Rip.
One full-sized bottle stood upon the shelf
Which held the medicine that he took himself;
Whate'er the reason, it must be confessed
He filled that bottle oftener than the rest:
What drug it held I don't presume to know—
The gilded label said "Elixir Pro."

One day the Doctor found the bottle full,
And, being thirsty, took a vigorous pull,
Put back the "Elixir" where 'twas always found,
And had old Dobbin saddled and brought 'round,
—You know those old-time rhubarb-colored nags
That carried Doctors and their saddle-bags;
Gracious beasts! they stopped at every place
Where blinds were shut—knew every patient's case—
Looked up and thought—the baby's in a fit—
That wont last long—he'll soon be through with it;
But shook their heads before the knockered door
Where some old lady told the story o'er
Whose endless stream of tribulation flows
For gastric griefs and peristaltic woes.

What jack o' lantern led him from his way,
And where it led him, it were hard to say;
Enough, that wandering many a weary mile
Through paths the mountain sheep trod single file,

O'ercome by feelings such as patients know
Who dose too freely with "Elixir Pro."
He tumbl—dismounted, slightly in a heap,
And lay, promiscuous, lapped in balmy sleep.

Night followed night, and day succeeded day,
But snoring still the slumbering Doctor lay.
Poor Dobbin, starving, thought upon his stall,
And straggled homeward, saddle-bags and all;
The village people hunted all around,
But Rip was missing—never could be found.
"Drownded" they guessed—for more than half a year
The pouts and eels *did* taste uncommon queer;
Some said of apple-brandy—other some
Found a strong flavor of New England rum.

Why can't a fellow hear the fine things said
About a fellow when a fellow's dead?
The best of doctors—so the press declared—
A public blessing while his life was spared,
True to his country, bounteous to the poor,
In all things temperate, sober, just and pure;
The best of husbands! echoed Mrs. Van,
And set her cap to catch another man.

So ends this Canto—if it's *quantum suff*,
We'll just stop here and say we've had enough,
And leave poor Rip to sleep for thirty years;
I grind the organ—if you lend your ears
To hear my second Canto, after that
We'll send around the monkey with the hat.

CANTO SECOND.

So thirty years had past—but not a word
In all that time of Rip was ever heard;
The world wagged on—it never does go back—
The widow Van was now the widow Mac—
France was an Empire—Andrew J. was dead,
And Abraham L. was reigning in his stead.
Four murderous years had passed in savage strife,
Yet still the rebel held his bloody knife.
At last one morning—who forgets the day
When the black cloud of war dissolved away?—
The joyous tidings spread o'er land and sea.
Rebellion done for! Grant has captured Lee!
Up every flagstaff sprang the Stars and Stripes—
Out rushed the Extras wild with mammoth types—

Down went the laborer's hod, the schoolboy's book—
"Hooraw!" he cried, "the rebel army's took!"
Ah! what a time! the folks all mad with joy
Each fond, pale mother thinking of her boy;
Old gray-haired fathers meeting—Have—you—heard?
And then a choke—and not another word;
Sisters all smiling—maidens, not less dear,
In trembling poise between a smile and tear;
Poor Bridget, thinking how she'll stuff the plums
In that big cake for Johnny, when he comes;
Cripples afoot—rheumatics on the jump,
Old girls so loving they could hug the pump,
Guns going bang! from every fort and ship—
They banged so loud at last they wakened Rip.

I spare the picture, how a man appears
Who's been asleep a score or two of years;
You all have seen it to perfection done
By Joe Van Wink—I mean Rip Jefferson.
Well, so it was—old Rip at last came back,
Claimed his old wife—the present widow Mac—
Had his old sign regilded and began
To practice physic on the same old plan.

Some weeks went by—it was not long to wait—
And "Please to call" grew frequent on the slate.
He had, in fact, an ancient, mildewed air,
A long grey beard, a plenteous lack of hair—
The musty look that always recommends
Your good old doctor to his ailing friends.
—Talk of your science! after all is said
There's nothing like a bare and shiny head.
Age lends the graces that are sure to please,
Folks want their doctors mouldy, like their cheese.

So Rip began to look at people's tongues
And thump their breasts (called it "sound their lungs,"),
Brushed up his knowledge smartly as he could,
Read in an old Cullen and in Doctor Good.
The town was healthy; for a month or two
He gave the sexton little work to do.

About the time when dogday heats begin,
Measles and mumps and mulligrubs set in;
With autumn evenings dysentery came.
And dusky typhoid lit his smouldering flame;
The blacksmith ailed—the carpenter was down,
And half the children sickened in the town.

The sexton's face grew shorter than before—
The sexton's wife a bran new bonnet wore.
Things looked quite serious—Death had got a grip
On old and young, in spite of Dr. Rip.

And now the Squire was taken with a chill—
Wife gave "hot drops"—at night an Indian pill;
Next morning, feverish—bedtime, getting worse,
Out of his head—began to rave and curse;
The Doctor sent for—double quick he came;
Ant. tart. gran. duo, and repeat the same
If no etcetera. Third day—nothing new;
Percussed his thorax—set him cussing, too—
Lung fever threatening—something of the sort—
Out with the lancet—let him blood—a quart—
Ten leeches next day—then blister to his side;
Ten grains of calomel—just then he died.

The deacon next required the doctor's care—
Took cold by sitting in a draught of air—
Pains in the back, but what the matter is
Not quite so clear—wife calls it "rheumatiz."
Rubs back with flannel—gives him something hot—
'Ah!" says the deacon, "that goes *nigh* the spot."
'Next day a *rigor*—run, my little man,
And say the deacon sends for Doctor Van.
The doctor came—percussion as before,
Thumping and banging till his ribs were sore—
"Right side the flattest"—then more vigorous raps—
Fever—that's certain—pleurisy, perhaps.
A quart of blood will ease the pain, no doubt,
Ten leeches next will help to suck it out,
Then clap a blister on the painful part—
But first two grains of *antimonium tart.*
Last, with a dose of cleansing calomel
Unload the portal system—that sounds well!

But when the self-same remedies were tried,
As all the village knew, the squire had died;
The neighbors hinted—"this will never do,
He's killed the squire—he'll kill the deacon, too."

Now, when a doctor's patients are perplexed,
A *consultation* comes in order next—
You know what that is? In a certain place
Meet certain doctors to discuss a case
And other matters, such as weather, crops,
Potatoes, pumpkins, lager beer and hops.

For what's the use—there's little to be said,
Nine times in ten your man's as good as dead—
At best a talk (the secret to disclose)
Where three men guess and *sometimes* one man knows.

The counsel summoned came without delay—
Young Doctor Green and shrewd old Dr. Gray—
They heard the story. "Bleed!" says Doctor Green,
"That's downright murder! cut his throat, you mean!
Leeches! the reptiles! Why, for pity's sake,
Not try an adder or a rattlesnake?
Blisters! Why bless you they're against the law—
It's rank assault and battery if they draw!
Tartrate of Antimony! shade of Luke!
Stomachs turn pale at thought of such rebuke!
The portal system! What's the man about?
Unload your nonsense! Calomel's played out!
You've been asleep—you'd better sleep away
Till some one calls you"——
"Stop!" says Doctor Gray—
"The story is you slept for thirty years;
With brother Green, I own that it appears
You must have slumbered most amazing sound;
But sleep once more till thirty years come round,
You'll find the lancet in its honored place,
Leeches and blisters rescued from disgrace,
Your drugs redeemed from fashion's passing scorn,
And counted safe to give to babes unborn."

Poor sleepy Rip, M. M. S. S., M. D.,
A puzzled, serious, saddened man was he;
Home from the deacon's house he plodded slow
And filled one bumper of "Elixir Pro."
"Good bye," he faltered, "Mrs. Van, my dear!
I'm going to sleep, but wake me once a year.
I don't like bleaching in the frost and dew,
I'll take the barn, if all the same to you.
Just once a year—remember! no mistake!
Cry 'Rip Van Winkle! time for you to wake!'
Watch for the week in May when laylocks blow,
For then the doctors meet, and I must go."

Just once a year the doctor's worthy dame
Goes to the barn and shouts her husband's name,
"Come, Rip Van Winkle!" (giving him a shake)
"Rip! Rip Van Winkle! time for you to wake!
Laylocks in blossom! 'tis the month of May—
The doctors' meeting is this blessed day,
And come what will, you know I heard you swear
You'd never miss it, but be always there!"

And so it is, as every year comes round
Old Rip Van Winkle here is always found.
You'll quickly know him by his mildewed air,
The hayseed sprinkled through his scanty hair,
The litchens growing on his rusty suit—
I've seen a toadstool sprouting on his boot—
Who says I lie? Does any man presume—
Toadstool? No matter—call it a mushroom,
Where is his seat? He moves it every year;
But look, you'll find him—he is always here—
Perhaps you'll track him by a whiff you know—
A certain flavor of "Elixir Pro."

Now, then, I give you—as you seem to think
We can drink healths without a drop to drink—
Health to the mighty sleeper—long live he!
Our brother Rip, M. M. S. S., M. D.!

—*Boston Medical and Surgical Journal.*

THE UTILITY OF ERGOT IN FACILITATING LABOR

By E. Mendenhall, M. D., of Zionsville, Ind.

It is an indisputable fact, that ever since the declaration was made to Mother Eve, "I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children," woman have brought forth their offspring with more or less pain, and frequently with very great suffering. So usual is the latter, it is not surprising that in all civilized portions of the globe, in modern times, the strongest sympathies of the most enlightened and philanthropic of every nation have been enlisted in behalf of women at the approach of the critical period, or advent, which will probably result in placing another human being upon this mundane sphere. Everything in science and art that can possibly be brought to her aid, or that will assist in any way, at such a time, to facilitate and abbreviate the duration and pangs of this interesting process, should be cheerfully rendered. "The great mission of the physician should be to save human suffering and prolong human life, and the physician who shows his want of common humanity and lack of skill, by allowing his patients to needlessly suffer, should lose both his reputation and practice with an intelligent community." With an enlarged charity and the promptings of the most profound sympathy, many instrumental and medicinal agents have been devised and resorted to, for the purpose of alleviating and curtailing the sufferings of childbirth. Among the most prominent and useful of these agents is the blasted rye, the ergot or spurred rye of the French, from the spur of a cock, the secale cornutum or horned rye of the Latins, the mutterkorn or womb grain of the Germans—the last indicating the popular belief in its virtues. In the whole range of the Materia Medica perhaps there is no drug of more interest to the intelligent practitioner, or whose action is more important and wonderful on the human system, than that of the blasted rye or ergot. Given during labor, as one writer says, as an accelerator of uterine action, it stands alone as being capable of facilitating, in a most extraordinary manner, the entire process of delivery. The parturient action of this drug is sanctioned by the wisdom and sustained by the experience of many years; and in cases proper for its use, the intelligent practitioner can ascribe to ergot a degree of promptness and certainty possessed by no other article known to the profession. Any attempt to prove the inertness of ergot on the pregnant or distended uterus at the present day, would be equaled only by the absurdity of an argument to prove that gun powder is not explosive, or that water untrammeled would not obey the laws of gravitation.

The midwives, in some portions of Europe, employed it so generally and indiscriminately in difficult labor that its use was prohibited by law in France as early as 1774. It was first introduced into obstetrical practice in this country by Dr. Stearns, of New York, in 1807. There are two principal medicinal elements or properties in this drug—one is the narcotic, or toxical, which resides in the oil, and the other is the uterine motor-stimulant, which is obtained by infusion in hot water, and which will rarely disappoint us in its action. Given in small doses to the male, it produces no obvious effects; but in the female it exhibits a strong tendency to the uterus, upon the contractile property of which it operates with great energy. Given in large doses, of from three to four drachms, or long continued, it produces headache, giddiness, stupor, reduction of frequency of the pulse, etc., thus denoting that it possesses narcotic and sedative properties. The effects of ergot usually follow its administration in from ten to twenty minutes, but certainly within the hour, from small doses of from twenty to forty grains, quantities that would occasion no symptoms of ergotism, or depression of the heart and nervous system. The ergot is absorbed, and thus, through the circulation, impresses the motor tract of the spinal marrow in that limited portion, wherever the uterine nerves take their origin. When it proves wholly inert or insufficient, the result is ascribed to peculiarity of constitution, or inferiority of the article used. Its effect upon the uterus, when manifest, is said to be productive of a permanent contraction, rather than an alternation with relaxation like that in natural labor.

The brief allusion to the composition and medicinal action of ergot thus far given, has chiefly been obtained from the United

States Dispensatory, and from a lecture delivered by Professor Chapman, in the Long Island College Hospital in 1860, and which I find accords with other writers of experience with this article in obstetrics. This much I deem necessary for a proper illustration and a clear understanding of what is to follow.

I find a great diversity in the results in the use of this article, as related in the various obstetrical works and medical journals, and also in conversing with numerous practitioners upon this subject. Some writers have denounced it either as wholly inert in their hands, or as exceedingly dangerous under any circumstances, if it does act. Some claim that it is nearly always hurtful to the mother, very liable to produce rupture of the uterus, and exceedingly destructive to the life of the child. Others claim that it may not hurt the mother if properly given, but always destroys the child, or produces such a state of asphyxia that its resuscitation to life is always difficult, and sometimes impossible. Others still, say it nearly always fails in their hands, and are nearly always unfortunate in its use; and others declare they would never give it, unless they felt sure the child would be born within twenty-five or thirty minutes, or within three or four pains. Some writers limit the time to three-fourths of an hour; others to one, or one and a half hours; and one writer says it should *never* be given to a primipara under *any* circumstances.

Dr. Jones, of Maryland, says: "When contractions have been excited by ergot, the pressure is much greater than in ordinary labor; it is more direct; it is continuous and unremitting. No relaxation of the uterine fibres takes place so long as the influences of the drug continue. A continuation of these contractions may cause an early detachment of the placenta before the birth of the child, and thus interrupt its circulation." Various statistical statements are given by numerous physicians throughout the country, in private practice and in hospitals, which show a large percentage of fatality among the infants who are so unfortunate as to be born under the influence of ergotic pains. I will not specify authorities, for any physician who has any doubts on this point can easily satisfy himself by an examination of the numerous obstetrical works, and reports in the various medical journals on the subject. And while it is neither desirable, and not always pleasant, to be arrayed in opposition to such high and competent authority, nevertheless a high sense of sacred duty impels me to express my dissent to their conclusions and their philosophy in regard to the results of the *judicious use* of ergot. That the statistical reports, and unfortunate effects resulting from its use, as stated, are strictly true, I entertain not the shadow of a doubt. And when we consider the conflicting, and ever varied conditions prescribed for its use, and the extreme cautions, dangerous tendency, and numerous hurtful and fatal effects to both mother and child, are so highly colored, and so partinaciously and deeply impressed upon the minds of students and young practioners, the problem is easily solved; and the great wonder is, that the article has not long since been expunged from our catalogue of *useful drugs*. With those who are influenced by these *extreme cautions* and unfavorable consequences, the result is just what might be expected. But luckily for humanity all are not so influenced; and some have taken a more rational view of the physiological and therapeutical action of ergot, and with such the results have been of the most salutary and gratifying character. I will only refer to a few authorities in support of this position.

Dr. Baldwin, of Baltimore, says: "Small doses, allowing a longer time to elapse during its employment, are the best, and its good purposes are obtained without unduly exciting the mother or endangering the life of the fœtus."

Dr. Hickey says: "In protracted natural labor, when the os is dilated, the membranes ruptured, the soft parts relaxed and moist, and no extra-uterine or physical impediment to the passage of the child, I deem ergot of great value, and believe it ought to be used in preference to the forceps."

Dr. Cross says: "That an English writer has announced that ergot, given in small doses of five to seven grains, repeated at intervals of twenty minutes, till three doses have been administered, produces pain *with intervals*, as in natural labor, and hence its action is attended with no danger whatever."

Dr. O'Gorman says: "In my hands it has never been productive of any injury to the mother, and given in full doses it excites the uterus to remitting or clonic pain, and the poisonous effects, if any, on the fœtus, were the result of pressure."

Dr. Hildreth, of Ohio, recommends giving ergot in footling cases, at the proper time, to facilitate delivery, and thus ensure the safety of the child, and recommends it as being far preferable to the use of the forceps, prescribed in the books for such cases. When it is evident, from any cause, that the strength and vital forces of the woman, in natural labor, will be too severely taxed and shocked by the painful and protracted struggle, give ergot. But before I attempt a further elucidation of the utility of ergot in facilitating and abridging the duration of labor, I propose to notice some of the objections urged against its utility and safety. It is said that it produces nausea and vomiting. I have not witnessed such effects follow its use more frequently than when it was not used, or when other warm drinks, or teas of any kind, were prescribed. There are frequently indigestible and acid food, and bilious matter in the stomach when labor commences, and vomiting is easily excited by sympathy with uterine pains alone, or by any substance whatever that may be taken into the stomach. When not violent or persistent, its effects have nearly always been salutary, and I have not had any reason to ascribe it to the action of ergot. It nearly always ceases of itself, when the stomach is thus freed from its contents. Sometimes a solution of bi-carbonate of soda with essence of peppermint and a little morphine will allay it.

Again, it is said there is great danger of producing rupture of the uterus by the use of ergot. "But the walls of the uterus, at full term, are more than one inch in thickness, forming a hollow muscle, equal in tension and cohesion to any other in the body. It is therefore unreasonable to suppose that the mere excitability produced by ergot, could ever be productive of any such result as rupture of a healthy uterus. Even the most powerful tetanic spasms from disease, or from poisonous doses of strychnia, are seldom or never followed by the rupture or the tearing across of any muscle." Hence, says Professor Chapman, all such accidents are the result of a softened or diseased condition of the muscular structure, and would occur whether ergot was given or not; and *post mortem* statistics confirm this view of the cause. Once more: it is said that its action is of a continuous, persistent character, and *no relaxation* follows, so that the fœtal circulation is so compressed that it finally ceases, and thus destroys the child before it is born; or it is so nearly strangulated that life is with great difficulty restored or maintained. Now, ergot has had to bear the blame of killing nearly all the dead children that have ever been delivered under its influence. And right here is just where all the erroneous ideas respecting the danger of ergot have, in my opinion, originated. I remember well when, over a quarter of a century ago, I had my first obstetrical case; and having been taught that ergot was to be used only as a *dernier resort*, on account of its danger to the child, I acted upon these impressions, and the result was just what might be expected; and it accords very nearly with the conclusions and statistical reports before alluded to, as showing its danger and destructive effects upon the lives of children. But a few years of close observation undeceived me, and led me to a more rational and favorable view of its use. I was often called to cases where everything was right, except the pains were a little irregular and not very strong, but just strong enough to keep the woman in torment; the os uteri would be nearly, or perhaps fully, dilated or dilatable, and the membranes a little tense at each pain. No progress would be made for many hours; but after four, six, or twelve, or more hours, the membranes would give way, and a little increase of pain would ensue. They would become a little more frequent and a little more energetic, but so little effort was produced that it would be two, three, or perhaps four hours before I could be certain that the child had advanced any at all; but I was then sure it was advancing a little. Hence, being deeply impressed with the truth of the adage, that "meddlesome midwifery is bad," I would still wait a little, as "parturition was a natural process," and therefore should not be interfered with. The parts were still cool, slippery, or moist, and dilated, or in a dilatable condition. Well, I would still wait —perhaps a little progress would be made, and perhaps not; after a time I perceived the scalp of the child was beginning to swell, the mucus in the vagina was becoming less; the parts were all becoming dry and tender, and began to swell and lose their elasticity; the woman was becoming restless and more impatient and exhausted every minute, and the assistants would look sad, and inquire if something was not wrong. I would assure them all was right, and that it was progressing slowly, and the child would certainly be born after a short time. Finally, as I will not pursue the history, the child is at last born dead, after a long, painful and tedious labor; the woman is much exhausted, the womb has lost its power to contract, blood rushes into the weakened vessels, hemorrhage ensues and is with difficulty arrested; the placenta perhaps immediately followed, as it had long been detached by the continuous pains; and take it altogether, the woman has had rather a hard time of it, and the child is lost, without the agency of ergot. Now, I will go back to where I left off the history, as this is a typical case, and as there stated, the woman and assistants were becoming impatient, discouraged and alarmed. Overcoming my fears and prejudices, I rely upon the *vis atergo* no longer, but administer ergot at this point and stage in the labor. Becoming impatient now, I give at once twenty, thirty, or perhaps forty grains in infusion; the pains not increasing, the dose is repeated in ten minutes or less, and then repeated again; the pains are still but little, if any, increased; the woman is now becoming stupid or wild; the pulse falls several beats in the minute, and after the lapse of an hour or less, I come to the conclusion that the ergot is worthless, and another parcel is sent for, and used with no better effect. In the meantime, if the child is not born by a continuation of the feeble pains, as when no ergot was given, the forceps are resorted to, and the labor is thus terminated. The child is dead, of course, and the ergot bears the blame of destroying the child by failing to act, as was supposed. Whereas the truth is, the irritability and contractile power of the muscular structure of the uterus were exhausted by the protracted and ineffectual efforts long before the ergot was given, and she suffered merely from the sedative and narcotic effects of the large and repeated doses of ergot, the toxical principle of which had been absorbed. Again, I will go back to the same point in the history of the same case, where the ergot was first given, and perhaps the irritability is not yet quite exhausted. The first or second dose speedily produces strong and persistent pains, and the child is soon expelled, or forced through the dry, swollen, tender and inelastic parts of the mother, and of course it is lifeless. Here, again, the ergot, as before, is condemned without the benefit of witness or jury, as a guilty murderer. Whereas the child had probably been dead some hours before the ergot was given, it having suffered from the compression of ineffectual pains long continued, and the placenta having long been detached from its connections with the uterus, from the same cause. This, gentlemen, is no fancy picture, but is the true type of what has, alas, too frequently happened in the earlier years of my own practice, and, as I have been informed, in that of others also. I have here described the usual course pursued in such cases, with its usual results, all of which is in accordance with high authority. My experience, however, has led me into a different practice, and therefore I am not done with this typical case yet, and will now make further use of it to illustrate and enforce the principles and doctrines I hold in regard to the *time* when, and the proper *manner* in which ergot should be used. Go back, if you please, with me in the same case, when the pains are somewhat irregular or rather feeble, the os uteri nearly or fully dilated, or in a dilatable condition, the vaginal canal and external parts, all of which are cool, bedewed with moisture, slippery, elastic, and either dilated or very soft. At this stage of the labor, if the membranes do not soon give way, the bag of waters should be ruptured, and no harm can ensue, for this is just when they should burst or advance as a dilator under the influence of the pains; and letting off the waters is a valuable stimulus to increase muscular effort of the uterus, and this nearly always follows, when the waters pass off at this stage of labor, either naturally or artificially. If they continue, however, as in the typical case, to be either irregular, feeble or inefficient, after a reasonable time, which should be determined by the judgment and skill of the medical attendant in each particular case, ergot should be given, and *not delayed* till either heat, dryness, swelling of the mother or child, or exhaustion of the mother has ensued. Infusion is the proper form in which to give it. Two scruples or one drachm of the powder to four ounces of hot water, steeped fifteen or twenty minutes, of which one-fourth to one-third is to be given at a time, and repeated every twenty minutes, if necessary, till its action becomes apparent.

Used in *this manner* and under *these conditions*, and at this *particular time*, it has rarely ever disappointed me in its use; certainly not more frequently than that of cathartics or opiates, when used for their peculiar indications. The woman is yet cheerful and strong, the uterus readily responds to its appropriate motor stimulus, the ergot, the parts are cool, moist and elastic, the "soft and hairy scalp of the child is well covered with mucus, and the bones beneath are so elastic, also, and so divided and traversed by fontanel and suture, that, with the proper uterine force, they are readily compressed and moulded to fit the pelvic straits;" and, therefore, it is with the utmost confidence that I *always give ergot* at this early period, expecting in *no case* that I will be disappointed in a speedy and safe delivery to both mother and child. The first portion nearly always begins to act before the expiration of the twenty minutes, and if so, no more is given unless it becomes evident, after the delay of twenty or thirty minutes more, that the uterus is not yet sufficiently stimulated to action. Given in these small doses, and this length of time apart, the regular contraction and relaxation, in *imitation of nature*, follows. The relaxation is *not complete*, and neither should it be, for it is not complete in natural labor—there is only a remission. But so long as entire relaxation takes place between the pains, no solid progress is made. There *must be tension* enough of the uterine muscles between the pains to maintain the advance that has been gained, and under the influence of these small doses of ergot here prescribed, there is no danger of sedation or narcotism to the mother, or of so much compression upon either the placenta or child as to produce strangulation or death. Under these conditions, and with these doses, the labor is almost universally speedily and safely terminated. Should it so happen, from peculiarity or want of susceptibility of the uterus or other causes, that the pains, thus only gently excited, fail to produce speedy delivery, no fears of danger from the use of ergot need be entertained. I occasionally omit, for a time, to repeat the doses in such cases, and let the uterus rest for a while, that its vitality and strength may be recuperated, when the exhibition of another portion is frequently followed by the speedy expulsion of a living child. I rarely give more than one drachm, in divided doses, at a time, without an interval of rest, unless it be in cases of convulsions, hemorrhage, or great nervous exhaustion. I these cases much larger doses are demanded. In frequently give one or two small doses of ergot just before the termination of natural labor, where it is either known or feared that hemorrhage or after pains will ensue from a want of proper contractile power in the uterus; and also for the expulsion of the placenta. Of course, where there is any physical impediment, or a manifest disproportion between the size of the child's head and the pelvis, or a deformed pelvis. ergot should not be given till the obstacles are removed. When the os uteri is rigid and undilated, it should first be rendered soft and yielding. When there is a wrong presentation, the malposition should first be corrected as far as possible. When the parts are dry, they should be anointed with lard, cold cream or oil.

Now, gentlemen, you have before you the conditions *in* which, and the principles *by* which, I am governed in the use of ergot. I am not confined in its uses to the typical cases given, by any means; but the same principles guide me in its use in presentations of either extremity, in either primapara or multipara, and *every position* where it is thought there is no *insurmountable obstacle* to overcome. I regard ergot, therefore, as a safe and efficient agent in preserving human life, in facilitating and curtailing the pains and duration of labor, as a prophylatic against post partum hemorrhage, and as a substitute for the forceps. It is, indeed, a great *time-saving*, as well as life-preserving, agent in obstetrics. I know it may, and has been said, that time is nothing; and this may be so to the physician in the city, who can visit or leave his patient every hour, if need be; but time *is something* to the physician in the village or country, where his patient is five to eight miles from his office; and time *is something* to the suffering female, in either city or country, when she can and should be relieved of her burden and agony, with safety, in a few short hours, instead of many, as is the custom. And time *is something* where the safety and life of the child are in imminent danger every moment from fatal compression, from long continuance in the pelvic straits. And besides these, the satisfaction and conscious feeling of security from subsequent hemorrhage *is something* to the accoucheur, who is compelled to leave his patient many miles away. But what avails theory and philosophical arguments without a practical demonstration, with successful results? As for myself, this theory has been practically carried out for several years past, and the consequences have been eminently successful. My experience with it, although not large, will count its hundreds of cases; and I cannot call to mind the time when a child at full term has not been born alive, certainly not within the past three or four years. I have used it in various kinds of tedious labor, in abnormal presentations, in footling cases, and as often in primapara, if not more frequently, than in multipara. Three primapara cases in which it was used, were aged respectively eighteen, twenty-six, and thirty-five years. Since I have adopted this plan in the use of ergot, I have had no forceps cases, no profuse or dangerous post partum hemorrhage, no metritus or puerperal fever, and the women have uniformly had a good getting up, and a speedy restoration to health, and the reasons are obvious. The nervous system has not been permitted to become exhausted by prolonged labor, nor the circulation much disturbed, but delivery was *complete* within a short time, the uterus having been *entirely emptied* of its contents, and was rapidly restored to its normal size and position, the temporary adventitious deposits within the meshes of the uterine walls having speedily disappeared under the condensing process resulting from uterine contraction.

Of course, no careful, intelligent accoucheur would administer ergot where the uterine contractions were regular and strong, and the child was making satisfactory progress; nor where there was any physical impediment in the way; nor where the os uteri was rigid and undilated, or the soft parts dry, hot, tender and unyielding, till these conditions were rectified as far as possible, except in cases of extreme necessity—such as convulsions, hemorrhage, or great exhaustion from prolonged labor—and then the accoucheur must do the best he can with a bad case, let the result be what it may. But the only safety for both mother and child is in speedy delivery, which can nearly always be accomplished by a *judicious* *use* of the ergot. It is the long sojourn *in*, and the protracted pressure *upon*, the fœtal head, during its transit through the pelvic canal, that destroys the life of the child.—*Transactions of the Indiana State Medical Society.*

RESULTS OF THE INJECTION OF PARASITIC SPORES INTO THE BLOOD OF ANIMALS.

By A. H. Nichols, M. D., Boston.

THE interesting discoveries of Hellier, Zürn, Chanveau and Davine, that there is contained in the blood, in several contagious diseases, numerous parasitic growths, known as micrococcus, mycothrix, leptothrix, etc., has stimulated further investigations in this comparatively new field, among the more recent of which are those of E. Semmer, Prosector at the Veterinary Institute at Dorpat, reported at length in *Virchow's Archiv* for April 16, 1870. His experiments consisted, first, in the repeated examinations of blood of animals which had died of contagious diseases, with the view of detecting therein any parasitic growths, and his results may be briefly summed up as follows:

In cases of glanders, micrococcus cells and bacteridiæ are found in the blood, lymph and pus of animals which have died of this disease.

In charbon (malignant vesicle) and septicæmia, the blood is found to contain numerous micrococcus cells, and bacteridiæ (micothrix and leptothrix), both in the form of simple filaments and also arranged together so as to form a chain, the latter growths having been long known under different names.

That these infusoria, having the form of slender cylindrical filaments, really are parasitic growths, was proved in the case of five pigs, which had died of septicæmia.

In the blood of these animals the actual growth of the filaments from the micrococcus cells was demonstrated under the microscope. The bacteridiæ seen in cases of charbon are for the most part shorter, more slender, and have a less distinct outline, than those found in septicæmia, where they vary in length, and consist of a single well-defined filament, and are at the same time less numerous than in the former disease.

These filaments, however, are not always of the same form, even in charbon, for here, also, variations are noticed, so that at times the parasitic growths in this disease resemble, both in form and size, those found in septicæmia.

These parasites, moreover, are found in other diseases characterized by blood poisoning, and even in the blood of some healthy animals a few micrococcus cells (penicellium glaucum) have been found, and in other cases both leptothrix and micrococcus (bacteridiæ) have been seen in the liver and intestines.

In order next to determine whether the contagious diseases above referred to are really caused by the parasites found in the blood, the author has tried a series of experiments, with the following results:

Penicellium spores, of the size of a red blood corpuscle, were mixed with distilled water, and then injected, by means of a small subcutaneous syringe, into the jugular veins of two colts. The animals remained perfectly well, however, after the injection.

Several weeks later, micrococcus cells were injected into the same animals, and here again the injections were not followed by any symptoms of disease.

Injections of anthrococcus cells were likewise followed by negative results.

A second series of injections was next made with large masses of the spores of penicellium glaucum. In these cases slight feverish symptoms were created, which soon disappeared, however, and upon an examination of the animals after they had been killed, all the organs and textures of the body were found to be quite normal.

The author next injected bacteridiæ from the blood of an animal infected with charbon, using in this instance a bottle with a glass tube attached, as recommended by Hallier.

The spores of this parasite were put into distilled water, and a few drops of this mixture were then forced into the jugular vein of a colt. At the end of five days the animal remained, to all appearances, quite well.

Five days after the first injection, two ounces of the same fluid, containing bacteridiæ and micrococcus cells, were thrown into the jugular vein of the same animal, by means of a large syringe armed with a small needle-like canula. This was followed by symptoms of fever, without loss of appetite, and the animal appeared soon to recover. On the tenth day after the inoculation, however, fever again set in, the appetite failed, the animal exhibited an unsteady gate, and died during the night.

The following was the result of the autopsy:

In the neck, around those spots where incisions had been made for the purpose of injections, the connective tissue was thickened and infiltrated with serum, exhibiting here and there ecchymosed patches. The jugular vein was filled with a dark colored blood of the consistence of tar, but otherwise not changed. Lower down on the neck, there was well-marked serous infiltration in parts remote from the point of injection.

On the left shoulder there was extensive extravasation of blood beneath the superficial integument, involving the connective tissue, and extending down beneath the muscles. In the abdominal and thoracic cavities and pericardium slight serous exudation. Numerous ecchymosed patches in the peritoneum, intestines, pleuræ, heart and lungs. Spleen enlarged, friable and gorged with blood. Liver of a yellowish brown color, and the microscope showed beginning fatty degeneration in this organ. Kidneys studded with large, yellow, hardened masses; and congested white fatty degeneration of the epithelial cells of the uriniferous tubules communicated a yellowish gray color to these entire organs. Lymphatic glands enlarged, softened, and several were of a brownish red color, caused by extravasation of blood. Brain and spinal cord infiltrated with serum, while the minute blood vessels were distended with blood. Ventricles filled with a clear, colorless liquid. The blood was everywhere of a dark brown color, of the consistence of tar, and contained large numbers of parasitic growths characteristic of charbon.

Here, then, charbon was produced in a colt by the injection of parasites taken from the blood of animals affected with that disease. In this instance the symptoms broke out on the ninth day after the injection, death occurring on the tenth day.—*Boston Medical and Surgical Journal.*

Pharmacy and Chemistry.

New Anæsthetics.—Dr. Liebreich, of Berlin, pursuing those researches which have already added to the list of the Materia Medica so invaluable an agent as chloral hydrate, has discovered a new anæsthetic, which he declares to be superior to chloroform. It is the compound known to chemists as ethylidene chloride ($C_2 H_4 Cl_2$), formed by the action of phosphoric chloride upon aldehyde. It is described as a colorless, mobile liquid, of an agreeable odor, boiling at 140° F., and quite volatile at ordinary temperatures. Sleep, he says, suddenly overtakes the inhaler, and he wakens quickly and involuntarily, as from a natural slumber. Hitherto no disagreeable effects whatever have attended upon or followed the inhalation of this compound, and it is said that Dr. Liebreich is sanguine in the hope that he has at last discovered an anæsthetic at once safe, pleasant and certain.

Dr. Richardson proposes, as a rapid, safe, and effectual anæsthetic, methylic ether. He has not been fully satisfied with bi-chloride of methylene, which he has employed for a number of years past. He has found it marvelously rapid, indeed, in its action, and safer than chloroform, but one or two deaths have already occurred under its use, and he has come to look with suspicion on the whole family of chlorinated compounds to which it belongs. Methylic ether produces anæsthesia very rapidly, without wholly destroying consciousness. It is not liable to produce spasm, syncope or asphyxia during inhalation, or nausea, headache, or other unpleasant symptoms subsequently. It differs from chloroform and chlorinated compounds generally, in having no direct action on the circulatory system. It destroyed life, at length, by paralyzing the organic nervous centres, the heart retaining its power to the last. The chief objection to the use of methylic ether is, that it is at ordinary temperatures a gas. It is, however, readily soluble in alcohol, chloroform, and ethylic ether, and even in water. Its solution in ethylic ether, however, is that best adapted for use as an anæsthetic. The gas is prepared by the action of strong sulphuric acid on methylic alcohol, and purified by washing repeatedly with a strong solution of potassa. Absolute ether is saturated with gas at a temperature of 32° F. From one to two drachms of the solution are found sufficient to produce narcotism. Its action is as rapid and, it would appear, as transient, as that of nitrous oxide, and it has been hitherto employed chiefly, like that anæsthetic, in the extraction of teeth, and other very brief operations.

Dr. H. C. Wood, of Philadelphia, suggests acetic ether as a pleasant anæsthetic, resembling, in its effects, ordinary ethylic ether. It has not, however, been fairly tested, as yet, but may prove a valuable addition to our list of anæsthetic agents.

GLYCERINE AS A SOLVENT.—As the result of a series of experiments, Klever found that 100 parts of glycerine would dissolve 20 parts of arsenious acid, 50 of tannin, 40 of alum, 10 of ammonium chloride, 5.5 of tartar emetic, 33 of sulphate of atropia, 7.5 of corrosive sublimate, 27 of mercuric cyanide, 1.9 of iodine, 0.2 of phosphorus, 20 of lead acetate, 3.5 of potassium chlorate, 25 of potassium bromide, 40 of potas-iodide, 50 of sodium arseniate, 60 of sodium borate, 98 of sodium mono-carbonate, 50 of zinc chloride, 35 of zinc sulphate. The alkaloids, morphia, quinia, atropia and strychnia, are but sparingly soluble, but their salts dissolve pretty freely. Thus, while strychnia requires 400 parts of glycerine to effect solution, the sulphate requires less than 5 parts.

REMOVAL OF NITRATE OF SILVER STAINS.—According to M. Grinma, chloride of copper removes completely, even from colored fabrics, stains occasioned by nitrate of silver. The tissue is to be afterwards washed with sodium hypo-sulphite solution, and finally with water. From white cotton and linen tissues the stains may be more readily and effectually removed by applying dilute solution of potassium permanganate and chlorhydric acid, followed by washing with solution of sodium hypo-sulphite, and rinsing in plenty of fresh water.—*Polyt. Notizblatt—Druggists' Circular.*

A NEW CEMENT.—When litharge is mixed with glycerine, a paste is formed which possesses the property of setting in a few minutes into a cement of extraordinary hardness. The cement thus formed resists the action, not only of boiling water, but of acids, alkalies, and, in fact, all the ordinary solvents. It is well suited for use as an impervious luting in joining chemical apparatus; it will adhere to glass, porcelain, or metals, will harden even under water, and will withstand a temperature of over 500° F. It is adapted, therefore, to a wide range of applications, which will suggest themselves at once to those interested in such matters.

QUININE VALERIANATE.—The following process for the preparation of valerianate of quinia, suggested by M. Lalien, commends itself by its simplicity, and yields highly satisfactory results. An alcoholic solution of potassium hydrate is saturated accurately with valerianic acid. To the solution of potassium valerianate thus formed is added an equivalent quantity of quinine sulphate; double decomposition ensues, the potassium sulphate formed being insoluble in the alcoholic fluid, is separated by filtration, and the filtrate evaporated to crystallization.

PURIFICATION of BISULPHIDE OF CARBON.—Commercial bisulphide of carbon possesses, as is well known, a powerful offensive odor, which totally unfits it for many of the uses to which it might otherwise be applied. It may, however, be rendered nearly inodorous by agitation with metallic mercury or mercuric chloride. The mercury combines with the free (?) sulphur which exists dissolved in the liquid, forming the black mercuric sulphide, which settles at length, leaving the clear fluid above quite pure, and free from offensive odor. After redistillation, the bisulphide is fit to be employed for the extraction of the most delicate perfumes.

TEST FOR NITRIC ACID.—An extremely delicate test for nitric acid has been found in the aniline sulphate. A little of the sulphate in solution is mixed with some concentrated sulphuric acid, and the mixture is then stirred with a glass rod which has been dipped into the fluid to be tested. If nitric acid be present, even in minute portions, a deep red color appears at once where the fluids mingle, owing to the production of fuchsin. It is said that even the minute traces of nitric acid in spring and rain waters may be detected by this method. Hyponitric acid also produces the same reaction, but can be distinguished by appropriate tests. The aniline sulphate is also a delicate reagent for chlorates. The test is applied in the same manner as for nitric acid, a splendid blue color, in place of a red, indicating chloric acid.

Editorial.

ONE of the most important pathological problems to be solved at the present day is the relation of zymotic diseases to certain specific causes, inasmuch as a thorough understanding of this is necessary to the application of preventive measures. Here, however, as well as elsewhere, experiment and theory are evolving definite results in advance of positive knowledge, and we have valuable aid in seeking for the causes of disease and in determining their specific nature from our experience with the application of remedies to the developed disorders. We seem to be gradually approaching the discovery of specifics for a number of the zymotic disorders, or, at least, means of warding off their attacks and of conferring immunity upon exposed individuals. Of course, first in the category of these agents comes quinine, with its marvelous power both as a prophylactic against, and curative agent in the treatment of, malarial disease. But its action is unique, and affords no insight, through its chemical composition, as to the why or the wherefore of its power. We know no better than before what the causative agent is in these fevers.

Other agents are not thus peculiar, but have a general destructive effect upon all forms of animal or vegetable life, and their efficacy in zymotic diseases is proportioned to their antiseptic power, and from this efficacy may we secondarily refer the cause of such diseases to animal or vegetable origin. Experiment has been pushed for several years in the direction of applying remedies for diseases depending upon a specific poison, through the medium of the blood. Prof. Polli, in Italy, claims great success in the treatment of malarial and typhoid fevers by the exhibition of sulphurous acid in its various combinations in the sulphites and hypo-sulphites. True, other observers have not found equally positive results, but still these salts are pretty conclusively proved to have a decidedly modifying effect upon the course of different diseases, and the limit to their power is probably narrowed by the impossibility of introducing a sufficient quantity of the salt into the circulation to destroy the morbific germs. More recently, carbolic acid has put forth its claims to a hearing, and apparently with better grounds. The poisonous influence of this acid over organic life, even when applied in very dilute solutions, points to its use for internal exhibition. A serious objection to it is its nauseous taste, exceedingly repugnant to most palates. Fortunately, in combination with alkalies both taste and odor are lost, and we have every indication fulfilled. The sulpho-carbolates of the alkalies will, we think, find a wide application in the treatment of the various forms of disease under question, most usefully, perhaps, as prophylactic, for it does not seem reasonable that any remedy of this kind should be adequate to stop the progress of the morbid change in disease, even though it be dependent upon a septic poison, any more than the removal of a sequestrum of necrosed bone should cause an immediate healing of lesions of the soft parts. The train of morbid symptoms, though established by a specific cause, yet also depends upon an absolute deviation in the tissues affected from a healthy state, consequently, malarial fever, even though broken, may leave a toxæmic state, manifested by deranged nutrition and perverted function in the liver and spleen. These conditions are governed by the same laws as hold good in relation to any lesion of tissue, and ~~is~~ not to be referred to the continued peculiar action of malaria. The same may be said of many of the symptoms attending most septic diseases. This is an important point, and one often lost sight of in experiments with remedies of this kind. Their power is invoked after the mischief is done and after the time when they can be useful is passed.

We believe that much may be realized in prophylaxis by the use of antiseptics, and hope to see more research in this direction. Thus far our own experience has been limited chiefly to the attempt to prevent the contagion of scarlatina from spreading among members of families where one or more were already attacked. It has been tried in quite a number of instances, and thus far with very satisfactory results. In only one family was a second child affected, and in that instance very lightly. In the other cases, though in each several children were freely exposed, no second case appeared. Of course little can be predicated upon so limited an experiment, and it is only thrown out for the purpose of stimulating research.

The formula used was as below:

℞. Sodæ sulphit	gr. iv.
Acid carbolic cryst., gtt. ss. Vel. sodæ sulphocarbolat	gr. iv.
Syr. simp	ʒii.
Ess. aromatic	q. s.

M. S. to be taken three times a day.

For a child five years old.

PERSONAL.—Prof. Alpheus B. Crosby, of the University of Michigan, has accepted the chair of Surgery in the Long Island College Hospital, Brooklyn, N. Y. We learn that Prof. Crosby contemplates making Brooklyn his future home.

We have to record this month an unusual mortality among eminent physicians.

Dr. James Copland, author of the well known Medical Dictionary, died from hæmaturia on the 12th of July, at the ripe age of 79.

Dr. Syme, of Edinburgh, has followed, after a very brief interval, his distinguished countryman, Dr. Simpson. We learn, also, that Dr. Simpson's widow survived him but a few months.

On this side of the water, Dr. Bedford, of New York, has finished his labors, leaving behind him, however, a name not to be soon forgotten.

PAMPHLETS AND JOURNALS RECEIVED.

ARCHIVES of Ophthalmology and Otology. Vol. 1, No. 2. Published by Wm. Wood & Co., New York.

THE *American Chemist.* A monthly journal of theoretical, analytical and technical chemistry. Wm. Baldwin & Co., publishers and proprietors, 434 Broom St., New York. We welcome this journal to our list of exchanges, confident that under the supervision of the distinguished gentlemen at its head it will replace the reprint of the *Chemical News*, which has been discontinued.

SECOND Annual Announcement and Catalogue of Detroit Medical College.

FIRST Annual Announcement of the Women's Hospital Medical College, of Chicago, Ill.

DETROIT Young Men's Society Annual Report.

Steiger's Literarischer Monatsicht for August, 1870.

Gardeners' Monthly for September.

DETROIT

Review of Medicine and Pharmacy.

Vol. V. OCTOBER, 1870. No. 10.

CLINICAL SURGERY.

By N. W. Webber, M. D., Professor of General and Descriptive Anatomy in Detroit Medical College.

Case I.—*Encephaloid Cancer of Left Leg—Amputation at lower third of thigh—Death from Pyemia.*

Gentlemen—I bring before you this morning, this little girl, Sarah Baremore, with the following history: She is thirteen years old, and, as you see, has light hair and a fair complexion. One and a half years ago she noticed that her leg was swelling, but, as it caused her no pain and in no way interfered with locomotion, not much notice was taken of it. The swelling extended from just above the ankle to within a few inches of the knee joint.

Up to within three weeks of her admittance into the hospital, she could run, jump and take her part in the plays of her companions. At that time two black pimples that looked, as she described them, like "fly specks" appeared on the middle of the leg, one on each side; they grew in size, ulcerated, rapidly run together, leaving a ragged, unhealthy ulcer. On her admittance, the ulcer was irregular in shape, and about four inches in diameter. Springing from the bottom of the ulcer on one side were fungus growths quite vascular in character, true fungus hæmatodes, while upon the other side the appearance was entirely different.

There was a whiteish-gray band of matter running from the bottom to the top that resembled somewhat the white central matter of the brain.

The ulcer was quite offensive to the smell and discharged pus freely.

The girl stated that, during the last week before her admittance, it had increased in size fully two-thirds. In my own mind there was no doubt as to the nature of the disease, but, before amputating, we thought best to try other means to check the disease.

As the ulcer was making such rapid strides in destroying the tissues of the leg, we thought we might excise the whole mass, cutting well into the healthy tissue, and then by cauterizing the raw surfaces with bromine or nitric acid, put a stop to its devastations.

In passing around the ulcer, I found the band of white medullary substance I have spoken of, running up the leg, under the skin, and on changing the direction of the knife and cutting up the leg over this I found that it extended to within a short distance of the knee, and seemed to connect itself with the tibia, which was enlarged and rough under the probe.

It being impossible to excise the diseased mass without excising the whole leg, and not having as yet gained her consent to this, I dressed her leg with carbolated oil and left her for the day.

To-day we bring her before you for the purpose of taking off her leg.

You can see for yourselves the unhealthy look this ulcer presents, and here, where I cut up the leg to trace this band of white matter, the disease seems to have attacked the integuments over-lying its margins.

I am very loth to operate in this case, for I think the chances are against her recovery; but as we look at the leg and consider that four weeks ago it was to the casual observer a healthy leg, and if we calculate, from the facts we have before us, the increase of the disease, if left alone, we can plainly draw our deductions, which would be death in a very short time.

And what a horrid spectacle would she present before death relieved her of her sufferings! Who of us would hesitate between sudden and immediate death and that living-death of months the unhappy possessor of a cancer endures? There is a shadow of a possibility that she may recover by an operation; there is not the faintest gleam of hope, in allowing the leg to remain.

We find that there is a slight enlargement of the tibia nearly up to its expanded articulating extremity, and to make the most of our possibilities we have thought best to amputate at the lower third of the thigh. As she is fully under the ether, we have the tourniquet screwed down, and, grasping the mass of muscles in front of the femur, pull them forward, pass the knife through them so as to just graze the femur and cutting down and forward make the anterior flap. Passing the knife into the incision already made, the muscles being relaxed, the knife is brought out behind the femur and I cut down and backward, making the posterior flap. Only one vessel, the popliteal, can be found that is necessary to tie, and after trimming off the redundant mass of muscles and fat we will pass in our sutures and allow the flaps to remain open exposed to the air for a while. We will have her placed in her bed, have her watched carefully, and in the course of an hour will close the wound and apply our dressings.

CASE II.—*Chronic Synovitis of the Knee with Caries, and Necrosis of the Tibia—Amputation of Thigh—Recovery.* This man, James Kelly, presents a great contrast to the patient just operated upon.

The extremes of life are met in these two cases. The girl is young, comely in looks, and to her, just budding into womanhood, life looks rosy and joyous.

This man has passed through the storms of sixty-six years; has accomplished more than the average length in life's journey, and now, at this late date, has made up his mind to have one of his legs cut off.

According to his story, when a boy, fifteen years old, he had a severe attack of typhoid fever. Something like a year afterwards, his leg commenced to swell, and it pained him so much he was compelled to take to his bed, and in a short time the swelling broke, discharging pus, and established what was then and is now a fever sore.

You understand that typhoid fever, or any other debilitating disease, by its interference with the processes of nutrition, by depressing the vitality of parts, causes the death often of those parts, and in bone, especially, where there is any scrofulous taint, necrosis very frequently results.

This man had, when a boy, a fever sore, or, in other words, the vitality of the periosteum of the tibia was destroyed and necrosis took place. The disease was neglected; it invaded the structure of the knee joint; anchylosis took place, and for fifty-one years he has been dragging this old sore leg about, every day his strengh and vitality running off with the pus that discharges from it, in and out of the different hospitals of the country, until at last he brings up here in the winter of life, and, clinging as tenaciously as ever to his hold on earth, he wants this burden removed. His grasp on life is getting weaker and more weak every day, and he realizes the fact that either he or his pet has got to go, and, as he had rather have no leg than no life, he implores that the leg may be sacrificed.

You can pass the probe in here at any of these fistulas and feel that peculiar rough, grating sensation, indicative of dead bone, and can see that the leg is flexed upon the thigh and perfectly immovable. Above the knee, we find old scars that mark the point of exit of pus, and they indicate that this part of the femur was implicated in the disease.

What are the chances for this man to pass through and recover from an operation? He is wearing out fast under the constant pain and irritation of this leg, and, if he is not relieved, death will take place in a short time.

If we compare the little girl we have just operated upon, with this old man, throwing out of consideration the malignant character of her disease, taking her in apparently good health, with the vigor of youth and a good constitution on her side, she would have the disadvantage of the large per centage of deaths in operations of this kind, at this time of year, to tell against, and tell they would most seriously. This man is carrying about an obnoxious leg, a foreign body; it is a constant source of irritation and drain upon his system, increasing in gravity every day.

If we take this leg off, the burden of his life is gone, and there will be a tendency towards recovery. I don't say he will recover, for I consider him quite low; his appetite is gone; his nights are restless; he is in constant pain, and the excessive hot weather we are having tell against him, and diminish his chances. He would, undoubtedly, die before cool weather set in, so that we have to operate now or never.

The thigh was amputated in the presence of the class. Flaps antero posterior at lower fourth. Some considerable blood was lost, and it was found necessary to tie six vessels.

The little girl recovered well from the shock; had a good appetite; rested well, and some hopes were entertained for her recovery. The fifth day, she was seized with rigors; purulent absorption took place, and she died on the twelfth day after the operation.

On dissecting out the leg, the patella and condyles of the femur were found implicated, being quite black in spots, while from the shaft the periosteum peeled off without any resistance.

The old man required a large amount of stimulants to bring about reaction, hovering for twelve hours between life and death. At last reaction was established, and he made a rapid recovery, the most of the wound uniting by first intention.

HOW TO REST THE MIND.

By W. H. Lathrop, M. D., Prof. of Physiology and Psychology, Detroit Medical College.

SAID the dying Anquetil to his physicians, "You see a man *dying full of life.*" A New York banker of vigorous physical appearance recently went to Europe for his health. Though to all external appearance perfectly well, he felt that his mind had been overworked and needed rest. Soon after his return home from Europe, however, he had an attack of apoplexy, occasioned, it seems probable, by a mistake with regard to the *kind* of diversion which he needed. He had exchanged one form of excitement for another, like a man who should take the blower down from his grate and substitute another of a different pattern in its place. It would seem much more advisable in such a case to go into the country, where the mind could be rested by an easy, quiet, *drifting* life. Mr. Greeley's cabbage garden might not have been a bad investment, after all, even though that attractive vegetable was raised, as he tells us, at an expense of thirteen dollars a head.

Agriculture, digging in the dirt, seems to be almost a specific for an overwrought brain.

Dean Swift predicted, as the sequel proved, that he should "die first at the top," for he felt that he was wearing out his brain too fast. It is said that "people is most happy whose annals are tiresome," and doubtless the same is true to some extent with regard to individuals; that life is not always, by any means, the most happy or the most useful that is filled with excitement.

Dr. Carpenter expresses very clearly the principles governing the wear and tear of brain: "Like all other tissues actively concerned in the vital operations, nervous matter is subject to a waste or disintegration, which bears an exact proportion to the activity of its operations. Every idea, every emotion, every act of volition, and every perception, however passive or fleeting, is necessarily attended by a waste and decay of a certain portion of the brain tissue." So intimate is this association of mind and matter, that Prof. Huxley says: "Matter may be regarded as a form of thought, and thought may be regarded as a property of matter."

In view, therefore, of this constant waste, some attention must be paid to repair, and the method of securing this repair of the mind must be especially adapted to the individual case. We speak of the relaxation of the mind as we do of the relaxation of a muscle; but the latter is a simple organ which may be rested merely by inactivity. The mind, on the other hand, from its complexity, does not respond to such simple treatment. Each individual mind must be studied by itself, and its proper kind of rest selected.

One of the first questions to be asked in regard to mental recruiting is, whether *quiet* or *excitement* is needed. An old lady said that some people, in looking forward to another world, were very much interested in the *occupations* of Heaven, but for her part she wanted *rest*. Physicians of large practice need this kind of recreation—the relief of having nothing particular to do for awhile.

In some young ladies' seminaries every portion of the twenty-four hours has some special duty assigned to it. The scholar feels that she is constantly in the harness. To many minds, undoubtedly, this excessive "avarice of time" is injurious. It is very refreshing for a short time every day, and for a few consecutive weeks in the year, to feel that we have no duties awaiting us.

In most cases the taste of the individual will dictate rightly whether quietness or excitement is best for him, but not always. The taste may become morbid, and in cases of incipient insanity extremely so. A gentleman in this State, who has been for many years a successful business man, has recently been so constantly engrossed in business that he is now on the verge of insanity. His extravagant bargains and increasingly irritable temper give certain evidence of approaching mental disease. Still his inclinations lead him to press on still further in the same mad course. Hugh Miller's case was somewhat similar. He felt an irresistible desire to make still greater mental exertions, although he knew perfectly well that such a course would injure him. These are exaggerated cases of morbid taste; but the same evil, less fully developed, is not uncommon. How often it happens that when exercise in the open air is just what people need to strengthen them, it is the last thing which they desire to do.

There are many pleasure seekers who throng the watering places in search of excitement, when they are already dwarfed in body and mind by their devotion to that species of pleasure. Still they crave it, as a child is always ready to eat more candy. A lady who passes the greater part of the year in the fashionable circles of city life, will be most benefited in the summer by going where the constraints of society may be laid aside. On the other hand, those whose ordinary lives are a monotonous routine of work and care, will be really benefited by a round of excitement and active amusement. If the vacation is a long one, there should certainly be some other object in view than mere enjoyment. This applies to school children and to grown people as well. To be enjoyed, their time must be well occupied.

"Want of occupation is not rest.
A mind quite vacant is a mind distressed."

I have heard it remarked that to enjoy a tour in a foreign country one should select some special field of study and observation. In this way there will always be some object in view to give piquancy to the trip. A man with such a purpose will see all the lesser objects of interest quite as well while pursuing his specialty. It is said that if you want to see a star at night that is a little dim, it is best to look on one side of it. So in seeking rest for the mind, it will not do to aim at it too directly. I have often thought that such a man as Humboldt or Agassiz must receive much more enjoyment from traveling than those who travel merely for pleasure.

We may derive many useful suggestions for the management of the comparatively healthy mind by studying the insane. There are two points suggested in this way that seem worthy of mention. In providing a suitable atmosphere for the diseased mind, the physician pays special attention to *occupation* and *companionship*. Chambers says, that "in all the concerns of organic, as of social life, anything is preferable to *stagnation*." This condition is fatal to mental health. The mind must be employed, and the asylum endeavors to furnish the patient with some kind of amusement or employment suited to his capacity.

Perhaps no problem is more perplexing in the treatment of the insane than this. Still, in most cases, the patient can, in some way, be amused. Providing suitable companionship for the insane is quite as important, and hence the classification of the patients which is carefully made. Many patients are made delirious, and some become maniacal, from the officious, inquisitive people who crowd about their bedsides. If the physician prohibits visitors from seeing the patient, he is thought oftentimes to be unnecessarily strict. People do not realize the great harm that is done to the sick by the presence of uncongenial visitors. The case is the same with those who, though not sick, are sufficiently unwell to need recreation. A large and interesting party may be entirely spoiled by one obnoxious member, and all the anticipated recreation frustrated. Mothers who go to places of amusement with crying babies must feel this truth; those sitting near them certainly do.

Discrimination on the part of patients themselves with regard to recreation, is hardly to be expected, but a physician's advice on the subject, it would seem, would be certainly heeded. Hence the subject is not unworthy of a physician's attention. Serious mental disease may be often prevented in this way. Insanity is becoming so prevalent in our country that all the causes leading to it should receive the careful study of general practitioners. A large proportion of the cases would never receive the sad diagnosis, "insanity," if their mental condition had received the early attention of their physicians.

The problem how to rest the mind, is full of importance in its application to children. Practitioners of medicine are constantly reminded that our school system, as at present constituted, is attended with many evils. The children are kept still too long. They are expected to study six hours or more in a day, when grown men find it difficult to do as much, though fully interested in their subjects of study, and gifted with mature minds. It is believed by a large body of the medical profession that the ultimate education of youth would be as efficient, both to the individuals themselves and to society, if the children did not study more than half as long.

A bright little girl, with a pale face and undefinable pains all over her body, presents herself to the physician for treatment. She has been at school since she was six years old, and she is now eleven. Her mother informs him that her child has been little inclined to take any exercise for two or three years past, though previously robust and healthy. She cannot go out and play after coming from school, because she is tired or has lessons to get. Every little while she has a short illness. She is fond of school and study, is flattered by her teacher, and makes good progress in her lessons. Such a child should leave school at once, and remain away until she is well, notwithstanding the protest of the teacher that she knows more about the child than the doctor does, and it is a shame to take away her best scholar. Not only are weak and delicate children made invalids by this excessive confinement, but those who are strong evidently suffer a loss of stamina.

Now the great difficulty in reducing the number of hours of school is, that the *parents* are unwilling to have it done. They want the children out of the way. For this reason they send them to school at the earliest possible age, and wish them to remain there as many hours in the day as possible. Calisthenics and walking exercises are now quite generally introduced into school rooms, and every effort is made on the part of the teachers to secure the good health of the pupils. It is the public who need to be aroused to the importance of this subject.

If, then, it be true that a much greater length of time is spent in the schools than is required for mental discipline, could not the surplus time be better utilized in attempts to keep the children alive? If three hours a day will secure the good results that are now accomplished by six, the three hours thus gained might well be devoted to some *manual* employment that will at the same time give the children exercise and teach them useful trades. At all events, it would show them what manual labor is, and would make them feel that it is honorable. But the kid-gloved parents raise their hands in holy horror. It cannot be. They wish their sons to be *gentlemen* and their daughters to be *ladies*. So the question is settled. It is so much the fashion to hold up the professions to youthful aspiration, that any move that should make the trades seem more respectable would certainly be a great advance in our system of popular education. Better far that a mechanic should have merely the rudiments of an education, than that he should have been led to despise the honorable employment by which he earns his honest living.

To combine instruction of this utilitarian character with the ordinary curriculum of study, would hardly be practicable in our city public schools, without an entire revolution in their character. The experiment could, however, be tried in private institutions, or even in public schools in small places, where the number of children is small, and the difficulties and expenses of the experiment would be slight. This is by no means a new idea. This method of education is now in full and successful operation in reformatory institutions throughout the country. The school-ship "Massachusetts," at Boston, and a similar one at New York, are set apart for this method of education—the object being to train boys to be good sailors, while at the same time they are duly instructed in a sensible English education. Agricultural colleges are organized on this plan, and some military schools also may be placed in this category. The boys in these institutions are cheerful and happy, because they are well. There can be little doubt that the best results would follow a similar course of instruction in schools throughout the country.

Reports of Societies.

DETROIT ACADEMY OF MEDICINE,

JULY 26, 1870.

A LETTER was read from Dr. Beech, of Coldwater, Mich., in acknowledgment of his election as corresponding member of the Academy. In his letter Dr. Beech made some interesting observations on post-partum hemorrhage, in which he spoke very highly of the use of chloroform in the lying-in room. He also said that he had noticed a rapid pulse previous to delivery in cases where severe hemorrhage followed it. He attributes this to an influence excited in the pneumogastric nerve, since it is found that coagulability of the blood is impaired by section of the nerve. He also noticed other peculiarities in the pulse of patients previous to severe post-partum hemorrhage.

A discussion then took place upon cholera infantum.

DR. JENKS—It was my design to prepare and present a paper at this time upon the subject of cholera infantum, but circumstances have prevented, and, in opening the discussion upon this disease, which is now so prevalent in our midst, I desire, before speaking of treatment, to say a few words regarding its symptoms and pathology, not for a moment presuming that the symptoms are unfamiliar to any member of the Academy, but, by rehearsing them and bringing them forward in detail, that we may have a more general expression from the gentlemen who follow me as to the treatment of the various phenomena manifested.

This disease is quite generally spoken of by authors as indigenous to the United States and peculiar to large cities during seasons of the greatest heat. As a rule, it is a disease of the town, but exceptionally it will be found in the country, more especially in low, damp localities, where malarial diseases are prevalent and hygienic surroundings are unfavorable to the health of children. The mortality of cholera infantum coincides with the rise of the thermometer above 90° F. We are told that, in the hottest week of July, 1866, there were in New York over 1,200 deaths from this disease, and in Philadelphia over 700. While we are able to trace cause and effect to a certain degree, still the pathology of this disorder is, to a great extent, uncertain and obscure. The exciting cause appears to produce effects upon the mucous membrane of the stomach and bowels the same as a corrosive poison would. It is thought by some authorities to be due to a vicarious functional action—that is, the secretive powers of the skin being interfered with by the extreme heat, a morbid action is excited in the mucous membrane of the intestinal canal. While it is unquestionably true that many intestinal disorders are produced in this way, it is a matter of doubt in my mind whether this is a sufficient explanation of the cause of cholera infantum.

Stupor and convulsions being of common occurence, we might be led to designate the disease as an affection of the nervous centres; it is possible that inflammation and effusion within the cranial cavity may occur. Brown Sequard says that we may have such symptoms present without organic cerebral disease, they being caused by the contraction of the blood vessels supplying the cerebral lobes, and thus irritating the vaso-motor nerves, either directly or reflectively. As a natural consequence, the cerebral vessels being contracted, the brain becomes anæmic and cannot properly perform its functions. Prof. Flint says this is the result of exhaustion produced by the abdominal affection. *Post-mortem* examinations have not shown sufficient lesions in the alimentary canal to designate the disease as solely intestinal. The intestinal follicles may show alteration, yet the mucous membrane is rarely found softened and ulcerated, and, instead of being of a red hue, is oftener found blanched and pale. Our conclusion is that the disease is a systemic rather than a local one. Of first importance in its therapeutics, is prophylactic and hygienic treatment. Change of air seems almost essential, but sometimes it is not attended with the good results we have hoped, for the reason that children are not removed from the heated town until the system is already poisoned and weakened beyond the possibility of recuperation in any locality. Yet we have all seen almost moribund children of our city restored to health by water trips. The numberless children and nurses that may be found, during the hot weather, covering the decks of the many ferry and steamboats that ply upon our beautiful river, bear testimony to the opinion to which physicians of our city have moulded the minds of people; for the popular as well as professional perception for the hygienic treatment of this affection, is a daily trip upon the river; and to the masses who, by poverty or other reasons, are prevented from distant journeys, the ferry boat is invaluable. As regards diet, the best of all is healthy mother's milk. Where the child does not nurse, I prefer *good* cow's milk, but not the kind that is too frequently brought to our doors as pure, country milk; and, to this point, I desire to call your attention as one of importance, how cows are fed and cared for that furnish the milk for our own families and those of our patients, to say nothing of water and deleterious substances added and then sold as undiluted and healthy milk. I prefer, where it can be done, that to young children the milk be administered before the animal warmth has subsided. Where this is impracticable, then let the milk stand in a cool place and use only the upper third. As a rule, let the milk be undiluted, except in some cases of great irritability of the stomach, then lime water is is a valable adjuvant. Where the disorder is gradual in its progress, calomel in $\frac{1}{12}$ to $\frac{1}{4}$ gr. doses is a valuable and important remedy to arrest the vomiting, seeming thus to act as a local sedative. Often I simultaneously administer morphia in $\frac{1}{80}$ to $\frac{1}{30}$ gr. doses; two or three drops of chloroform will frequently arrest the vomiting. In severe cases, where the prostration is extreme and the nervous system is fairly exhausted, so much so that fatal collapse is threatening, I know of no better, more reliable remedy than opium, given by the mouth if tolerated, or administered by the rectum where it is not; where there are dysenteric symptoms with severe tenesmus, opium, by the latter method, is preferable. I have, contrary to my early belief, no fear in its administration, if given judiciously and its effects carefully watched, for it seems markedly indicated as a nervous sustenant, and only in sustaining doses in a disease characterized as this is by sudden and extreme nervous prostration. We also have, in brandy, beef essence, wine, etc., other means of keeping up the necessary strength to resist the ravages of this disorder. It is sometimes the case, where the stomach instantly rejects all food that it receives, that the child must be sustained by nutritious enemata, and only such bland articles as barely water for quenching thirst can be allowed by the mouth.

Dr. Cleland—I also use calomel. If the child is cold, I have found great benefits from bathing with warm oil. In vomiting, I have used cracker water as long as this condition lasted.

Dr. Lyster—I depend especially on hygienic treatment; generally do not give calomel nor opiates. In vomiting, I give tr. camphor gtt. x, in a tumblerful of ice-water, also, brandy, sometimes. Externally, oil is advantageous, as has been suggested; also, whisky and quinine. If the secretions are like the washings of stale meat, I give bismuth. This season has not seemed to be especially fatal to children as regards this disease.

Dr. Stewart—I give calomel at first, and afterwards Dover's powder, and then arom. spts. ammon, with brandy. I allow no cow's milk; but beef tea instead.

Dr. Bigelow—Although a change of air is desirable in this disease, yet I am not inclined to regard cholera infantum as particularly a disease of the large towns. I have seen quite as much of it in the country as in the city. I usually give calomel and ipecac, of each ⅛ gr.; not often opium, for fear of affecting the brain.

Dr. McGraw—The change of air also brings with it other advantages. The diet is changed and especially the milk, which, on going to the country, is generally better. I think that buttermilk is very good in this disease.

Dr. Noyes—There can be no great disagreement, I think, with us as to the pathology in this complaint. Most probably it is, as Dr. Jenks has said, a systemic disease more than a local one. The whole nutritive apparatus is deranged. An imperfect and impoverished blood disorders the whole system. I would depend, therefore, principally on diet and hygiene. The period of dentition is always one of great danger, and, with those children who do not nurse, but are fed on an artificial diet, the disease is generally more fatal. It is stated on good authority that one-third of infants die before reaching the age of twenty-two months. The mortality appears to be greatest in our large towns and cities. The cause of it is to be found in the bad quality of air and food, as Dr. Jenks has said.

I have administered all the remedies that have been mentioned. Early in my practice, I followed closely the books, and, twenty years ago, gave more medicine than I do now. Prof. Meigs was then considered the best authority on diseases of children, if he is not now. While I regard opium as indispensable in some cases, I give it with great caution, for fear, as has been stated, of affecting the brain. Pure air and suitable nourishment must always be of the first importance in this as in other diseases. Raw meat, first suggested by Professor Trousseau, of Paris, I believe to be the very best diet for children run down with summer complaints. This has been verified by observation and considerable experience in my own practice for the last eight years. This distinguished teacher, I observed, while visiting the Children's Hospital in that city, in 1858, relied upon it almost exclusively as a remedy for the sick children there. Beef or mutton may be used. It should be cut up fine or bruised into a pulp or jelly, with all the fat and fibre taken out; children are very fond of it. For older children, I have sometimes mixed with it a little, fine, white sugar. In cases of great prostration with vomiting, indigestion, in ulceration and disordered bowels, where other food irritates and passes undigested, it works like a charm; it is tolerated by the stomach and bowels and furnishes the most efficient kind of nutriment. Beef tea will not take the place of it. It is best suited, and, in fact, forms the very best nutriment in all cases of debility from deranged nutrition in marasmus, for the old as well as the young.

As the temperature approaches blood heat, above 90°, as has been stated, generally the disease increases in frequency and mortality. Such, I think, has been observed in our city this season.

A timely removal to the pure air of the country and a cooler locality should, therefore, be regarded of paramount importance. I have no doubt that I rescued a case recently when all else had failed by sending it off to a cool place on Middle Bass Island (Capt. Atwood's), in Lake Erie.

DR. INGLIS—This has been a very warm summer; but cholera infantum has seemed to me to be less fatal than it was last year. Dr. Cleland tells me that his experience has led him to the same opinion.

DR. JENKS—There were twenty-seven babies buried in one day last week at Elmwood.

DR. INGLIS—There have been more cases in the suburbs than in the heart of the city. With regard to cow's milk, I am of the opinion that it is decidedly injurious. I look upon it as a *perfect poison to a babe*, and, more than any thing else, the great cause of cholera infantum in children. Cow's milk should never be given to a child under two years of age. The case would be different if the cow were milked immediately before the milk was given to the child, as is often the case when goat's milk is given; but if the milk stands for any length of time there must ensue a certain degree of decomposition.

Dr. Noyes now reported a very interesting case of intra-cerebral tumor, producing total blindness, and, in a few months, death, which had recently come under his care at St. Luke's Hospital. An autopsy revealed a large tumor in the substance of the brain lying over the right lateral ventricle. A full report of the case will appear elsewhere.

FRENCH JUSTICE.—A Paris *pharmacien* has been subjected to a fine of one hundred francs, with costs, or to be imprisoned for forty days, as a penalty for supplying in a prescription a bottle of vin cinchonæ of the French Codex, instead of "Sequin's cinchona wine." Additional to this, the unfortunate apothecary was compelled to have a copy of the judgment displayed on his door, and at the shops of nine other *pharmaciens* residing near him.—*American Journal of Pharmacy.*

Selections.

ON THE TREATMENT OF HÆMOPTYSIS.

By Dyce Buckworth, M. D., Assistant Physician to St. Bartholomew's Hospital.

AMONG many problems in therapeutics awaiting solution upon a basis which is satisfactory to the scientific inquirer, and therefore due to the claims of legitimate medicine, stands the question as to the value and *modus operandi* of styptic agents when given internally. They are constantly made use of, and both the routine of practice and popular demand tend, I believe, to encourage their employment with unnecessary frequency.

I propose to discuss briefly in this paper the practice of treating hæmoptysis with styptic remedies.

In estimating the value of any special plan of treatment, it is, of course, necessary to pay especial attention to the cause and tendency of the morbid condition or symptom we try to rectify or relieve. In the more apt language of my distinguished former teacher, Professor Hughes Bennett, "a correct pathology must ever precede scientific therapeutics."

With regard to hæmoptysis, then, we find that in the great majority of cases it is a symptom of pulmonary consumption. The occasional bleeding from thoracic aneurisms, and those arising from pulmonary congestion, secondary to heart disease, may be said practically to call for no interference with styptics; neither do the occasional small hæmoptyses which occur in the course of chronic bronchitis and emphysema. It is, however, a question with some whether the hemorrhage in pulmonary apoplexy should be restrained. The late M. Trousseau advised the use of ipecacuanha in these cases, and wrote favorably of it. [I cannot myself see that it is desirable to check the *expectoration* of blood in such a case, though any remedy that would prevent hemorrhage into the texture of the lungs might justly be extolled.] Passing by the comparatively rare cases of cancer and hydatid of the lungs as affording causes for hæmoptysis, we are left mainly to deal with that arising from phthisis; and in reviewing the causes and results of this accident it is proper, in the first place, to bear in mind that death directly from it is the rarest of occurrences. During the largest hospital experience of the last twelve years, I have myself seen only one death from this cause. An accurate diagnosis should be made, so far as is possible. It is certainly wrong to percuss the chest, or make any such physical examination of it as entails movement or disturbance to the patient. The bleeding is usually from small bronchial, arterial, or from pulmonary venous branches, eaten into by ulceration. It is always recognized as from these sources, unless the blood be distinctly venous in appearance, when, as most rarely happens, a branch of the pulmonary artery has ruptured.

I believe that a large number of cases of simple hæmoptysis require no medicinal treatment whatever. The occurrence is often so regulated as to be what we may call self-limited; that is, a vessel or some small vessels rupture, they bleed for a time, and they cease to bleed. The analogy in this respect, I believe, between such a breach and a similar one elsewhere on the body, is not so distant as may be at first supposed. Many cases of pulmonary hemorrhage terminate in this way. In the meantime there may have been wise or unwise measures employed to check the process, and these are not unlikely to win credit for the satisfactory result. I need hardly say here that this is no evidence whatever to us as therapeutists.

How often, indeed, are practitioners summoned to cases of hæmoptysis, and on arrival find there is nothing for them to do. The patient's condition in the meantime may have been most inconducive to the result. He is perhaps found lying on a warm feather bed, in a close room, surrounded by anxious attendants. Perhaps the only favoring circumstance in a somewhat severe case may have been the partially syncopal condition, induced by alarm at the sight of blood, which moderated the cardiac action.

Nothind beyond rest and suitable hygienic practice is called for; but if there be interference with medicine, the result will be perhaps set down to the particular drug employed. There is no doubt that many agents have not only gained, but maintained a reputation as hæmostatics on the credit of cases similar to the above. And, indeed, if we boldly survey the whole field of therapeutics, we find the same sort of faith to prevail only too largely.

So much, then, for those cases, a large number, as I have stated, requiring no interference with drugs. We are compelled, however, to treat a hæmoptysis which does not cease spontaneously.

It is first to be borne in mind that, with perhaps one exception, to be presently mentioned, we are not in possession of the means to effect a change in the vascular walls in a short period of time. Some hæmostatics no doubt act rapidly, by altering the relations between the blood and the vessels.

"In all cases," remarks Professor Bennett, "the best remedy is perfect quietude and avoidance of every kind of excitement, bodily and mental. Astringents have been recommended, especially acetate of lead and gallic acid; but how a few grains of these remedies, introduced into the stomach, can operate upon ruptured vessels in the lungs, I am at a loss to understand; and I have never seen a case in which their administration was unequivocally useful."

This is a bold assertion as to styptic drugs, but in the class of cases we are now considering, I believe it will not deter the practitioner from interference. It is my conviction that we are warranted by the results in employing certain drugs in severe and prolonged hæmoptysis. It is perhaps too much the habit to give opium and powerful astringents in these cases. To be of any use, ℈j to ʒss of gallic acid should be given every half hour at first, or gr. ij to v of the acetate of lead as often. The result of such medication, in many instances, is so to disturb the digestive powers and nutritive processes as to throw back the patient, and render the hemorrhagic attack altogether a very severe accident for him. I believe the value of opium in hæmoptysis to consist, not only in its general calmative powers, diminishing irritability and checking cough, but also in its local tonic action upon the small vessels. That continued doses of acetate of lead produce a marked effect upon a ruptured vascular surface, I entertain no doubt. We are, it is true, met with the difficulty of supposing that a few grains introduced into the mass of the circulation—say gr. x to lb. 15 of blood—should act in so decided a manner. "We must remember that though only a minute quantity at a time is presented to the injured capillary, that quantity is continually succeeded by others as the course of the circulation passes over the part. Lead is absorbed with ease, excreted with difficulty. It diminishes the red corpuscles, and thus directly counteracts the hemorrhagic diathesis."

I believe, however, that in many cases we may dispense with this remedy, as also with gallic acid, in favor of the more simple plan I shall now mention. On the occurrence of continued hæmoptysis, all other remedies should be withheld, and a simple astringent or slightly aperient medicine given. A good form is *m* x to *m* xv of dilute sulphuric acid, and, according to the state of the bowels, ʒ ss to ʒ j of sulphate of magnesia may be given with this in some spearmint water every half hour at first, and then less frequently. In addition to suitable posture (semi-erect) and other well known favoring conditions, absolute silence should be enjoined, and the patient urged to refrain from coughing as much as possible. Should the bleeding continue, we should place a bladder of ice, or a frozen compress, between the scapulæ for a short time. This sometimes acts promptly, no doubt by reflex action, and probably this is the only means whereby a rapid change can be induced in the vascular walls. Should this fail, tinct. digitalis should be given (*m* x or xv) with each dose of the stringent saline. In addition to this, if the case appears obstinate, a blister should be painted on the front of the chest, if possible under the clavicle of the side believed to be affected.

The ordinary habits and remedies may be resumed in a day or two after the cessation of the hemorrhage.

The above description comprises the most beneficial method which I have witnessed, and, in setting it forth here, I need not say that there is no novelty in it. I do believe, however, that it deserves to be employed more frequently, instead of the medication with opium and powerful astringents.

Of the value of ergot, turpentine and common salt, remedies frequently employed and lauded, I have no experience. I imagine the actions of opium and ergot are not dissimilar as regards their effect on the small blood vessels.

Digitalis has fully vindicated its right to a high place in our list of hæmostatics. It is believed to produce its effect independently of any action on the circulation. Dickinson suggests that it influences the muscular fibres of the uterus in cases of menorrhagia, in which it is of great value.

Ipecacuanha enjoys considerable reputation as a hæmostatic, especially in the Parisian school. I think the following experience of it in hæmoptysis worth recording in this place. I employed it in two bad cases, and watched its effect in a third. In only one of these was the result satisfactory.

Case 1.—A farm laborer, aged twenty-one, admitted into hospital with a second attack of hæmoptysis, which had persisted for five days. Sufficient evidence of mischief was elicited at the left apex. I gave him gr. ij pulv. ipec. 4tis horis. This caused only slight nausea. Next day hæmoptysis continued. Ordered gr. v 4tis horis. This caused vomiting, but was persisted with. Hæmoptysis not checked. A blister under the left clavicle was of no service. The bleeding ceased gradually in two or three days, the patient taking, in the meantime, sulphuric acid and digitalis mixture.

Case 2.—J. P., aged 35, Royal Dockyard policeman was admitted into Plymouth Hospital with severe hæmoptysis. Known to be a subject of chronic phthisis for last three years. Ordered by the late Inspector General, Dr. Stewart, ʒ ij vin ipec. (=circ. gr. v pulv. ipec.) secundishoris. This caused vomiting, and the remedy was suspended in favor of gallic acid, which failed, and was replaced by sulphuric acid and digitalis mixture, which likewise was of no avail. The man died purely from hæmoptysis and syncope in three days, and on examination I found several bronchial ulcers in the left apex, communicating with branches of (probably) the pulmonary vein.

Case 3.—Out-patient, aged 64, hale looking man; had suffered for some days with hæmoptysis. Physical signs *nil.* To take *m* x vin. ipec. (= gr. ss) ter die. No benefit derived in a week, when gr. v of gallic acid were ordered ter die. Next week æmhoptysis no better; blood was brought up in my presence; to take gr. iij pulv. ipec. ter die. On the second day of this treatment the hæmoptysis ceased completely. The powder was taken till the fourth day, when it proved purgative, and was suspended. No nausea was produced. In six months' time, no change in condition of chest, and no further hæmoptysis.

In two of the cases nausea occurred. Trousseau maintained that neither this nor actual emesis interfered with the good result. One naturally fears the disturbance to the circulation in vomiting, but this circumstance is not proved to contraindicate nauseant remedies. The styptic action of ipecacuanha, if it really exist, is not yet explained. I have elsewhere shown that the theory of its bleaching the lungs is untenable, and that these organs, on the contrary, are found full of blood after its use. I am disposed to believe that this drug does not act similarly on all individuals, and that, just as the dust of it excites an asthma in some persons, and is harmless to the air passages (in small quantity) of others, so the nervous arrangements of some may be more susceptible to its action. Laycock believes that it excites a similar contraction in the vascular to that which it promotes in the bronchial tubes of some persons.

The hæmostatic action of nauseant remedies are perhaps partly explicable by the calmer state of circulation they induce.

In many cases, I believe, we may bear in mind the opinions of the late Dr. Theophilus Thomson and other authorities, which teach that oftentimes in phthisis moderate hæmoptysis is useful, and seems to retard a fatal issue.

In conclusion, I would make one or two remarks as to the blame which is sometimes set to the account of steel and cod liver oil in causing hæmoptysis in cases of phthisis.

Cullen forbade the use of ferruginous medicines as styptics, because they "contributed to increase the phlogistic diathesis of the system;" he also condemned Peruvian bark for the same reason.

There are those who deny the truth of this, and consider that even if such were the case, no harm would result. I suppose few remedies are more largely employed. If iron be withheld from the cases where there are manifestly present pyrexial symptoms, hardly any complaint could be made.

In these instances the remedy is unsuited, and quinine replaces it with much advantage. And so with cod-liver oil. It is not, however, possible, in every case, to say whether one or the other will positively prove harmful, and the truth in the matter is, I believe, comprised in the following, which is the experience of my colleague, Dr. Andrew, viz., that both steel and cod-liver oil do cause hæmoptysis in a certain small number of phthisical patients, who, therefore, cannot take these remedies. The greater number, however, bear both well without any such occurrence being fairly chargeable to their use.—*Practitioner.*

HONORS TO PARISIAN CHEMISTS.—M. Wurtz, chemist of Paris, has been elected Vice-President of the Academy of Medicine for 1870, and M. Bouis has been appointed to the chair of Toxicology in the Upper School of Pharmacy in Paris.

ON PAIN AND ITS TREATMENT.

By J. P. Atkinson, M. D., etc., late Surgeon St. Bartholomew's Hospital, Chatham, and Royal South London Dispensary.

THE existence of pain presupposes the existence of:

1. A brain (to appreciate pain).
2. A chain of nervous matter (to convey the sensation of pain to the brain).
3. Arterial blood circulating in and around the nervous centres (to give the nervous matter life to enable it to convey the sensation of pain).

It cannot under any circumstances occur, if one of the conditions be absent. Cut off the supply of blood to the nervous system, and no impression can be made upon it; cut in two the nervous connection, and the sensation of pain cannot be conveyed to the brain. Remove the brain, and there can be no appreciation of pain.

The following circumstances generally give rise to more or less pain:

Increased activity of brain and nervous system, owing to increased electrical action, or alteration in quantity or quality of the blood. Increased supply of blood dependent on nervous irritation. Pressure on a nerve. Excessive muscular exertion. It is accompanied by excess of blood, both in the part and in the brain, and uses up vital force more rapidly and wastefully than muscular and intellectual work. The restoration of nerve tissue which ought to go on during sleep is suspended, waste products accumulate, and thus the nutrition of the nervous system is affected in three different ways: there is increased waste, increased accumulation of waste, less repair; digestion becomes impaired, and the various secretions disordered. Pain indicates that there is a disturbance of the harmony which usually exists in the body, and that the part or organ so complaining has been unduly exercised, and is in fact suffering from exhaustion. Excite the heart's action too much, exercise the brain or muscular system too much, and pain is the result. In the production of local anæsthesia, very sharp pain is experienced just before the nerves begin to lose their vitality. This is due to the extreme nervous tension produced by the action of the cold, and is an exhibition of fatigue. The pain felt in wounds produced by bruising is the result of the nerve power being diminished, and the tissues pressed upon by the products of extravasation. Extreme mental anxiety is a condition allied to that produced by excessive muscular or nervous irritation (it is, as it were, mental pain produced by over-exertion of the brain), and the same symptoms are induced since the brain is incapable of engaging, as hitherto, in calm thought and reasoning. The various agents which tend to produce pain in increased intensity cause death. Since pain is coincident with the occurrence of inflammation, it follows that the nervous system must be, to a greater or less extent, concerned in its production; and in order to show what share it really does take, I will describe the three stages of inflammation thus:

1. Irritation of nerve, causing contraction of capillaries in the part, and increased rapidity of circulation.
2. The nerve by continued irritation begins to lose its controlling force over the vessels. The capillaries gradually dilate, the blood circulates more and more slowly, and by degrees the corpuscles adhere to the sides of the vessels. The tissues in the immediate contiguity appear to assume a much greater attractive force, and to lose their previous power of selection.
3. Increased paralysis of nerve, complete stagnation of blood, effusion of serum into the surrounding tissues.

Dr. Radcliffe and Dr. Anstie divide painful inflammation into two classes:

1. Where the pain lasts only during the preliminary stage of inflammation.
2. Where the pain persists after the second stage has commenced.

In the latter the tissues are subjected to compression, friction or stretching. Before beginning to speak of the treatment of pain, I would remark that health is a condition in which every organ of the body performs its functions in a proper and efficient manner, and one which tends to afford its possessor true mental felicity. Though there may be and are various signs of health, it is folly, under any circumstances, to speak of it as excessive. Health is the very highest point we can reach, and all deviations from this must be in a downward direction. From this it may easily be inferred that the chief things I would advise for the restoration of nerve power are rest and support. The latter must always be administered in such a form as is compatible with the weakened state of the digestion. In cases of extreme mental distress, accompanied by insomnia, where the *fons et origo mali* is the brain, I would recommend such articles of food as corn-flour, bread and milk, eggs and beef tea, more especially the first two. If stimulants are required, the best are ammonia, tea, coffee, etc. Rest is most readily obtained by the bromide of ammonium or potassium, or the hydrate of chloral. Where the cause of the pain is eccentric, or dependent upon a disordered state of the blood, I would suggest the employment of alcohol in preference to the stimulants mentioned above. It should be repeated often, and in small quantity. Flushing of the face, increased temperature, quickened pulses with increased dicrotism, the appearance of alcohol unaltered in the urine, are one and all indications that it is being given in excess, while the opposite of these symptoms are indications that benefit is resulting from its use. Here opium clearly shows what it can do in restoring nerve power and procuring rest. It may be applied either locally or given internally. Hypodermic injection is certainly a very valuable way of administering sedatives; occasionally, where the hypodermic injection of morphia and atropine fails, an amelioration is quickly obtained from a series of blisters and applications of morphia to the denuded surface. In some cases, atropine, morphia and tincture of aconite, when mixed with chloroform and simply applied to the skin, seem to afford as much ease as when they are used hypodermically. Some attacks of brow ague are instantly and permanently relieved by local anæsthesia. Local stimulants also occasionally effect a great deal of good. As regards the medicinal treatment of pain, it may be said in few words to consist in the administration of nerve tonics with sedatives: thus, for neuralgia, quinine, arsenic or chloride of ammonium are generally prescribed with belladonna, colchicum, conium, lactuca, or cannabis indica; for neuralgia of the testis, perchloride of iron. Hemicrania is almost always benefited by muriate of cinchonine or iodide of potassium. The twitchings that accompany locomotor ataxy are generally relieved by nitrate of silver in combination with belladonna. Numerous other instances might be given where nerve tonics and blood restorers are prescribed for the relief of pain; but these I think are sufficient to show the correctness of what I have stated above.—*Practitioner.*

ON THE RELATIONS BETWEEN BODY AND MIND.

By Henry Maudsley, M. D., F. R. C. P.

LECTURE II—PART I.

GENTLEMEN—In my last lecture I gave a general survey of the physiology of our mental functions, showing how indissolubly they are bound up with the bodily functions, and how barren must, of necessity, be a study of mind apart from body. I pointed out that the higher mental operations were functions of the supreme nerve centres; but that, though of a higher and more complex nature than the functions of the lower nerve centres, they obeyed the same physiological laws of evolution, and could be best approached through a knowledge of them. I now prepose to show that the phenomena of the derangement of mind bear out fully this view of its nature; that we have not to deal with disease of a metaphysical entity, which the method of inductive inquiry cannot reach, nor the resources of the medical art touch, but with disease of the nervous system, disclosing itself by physical and mental symptoms. I say advisedly physical and mental, because in most, if not all, cases of insanity, at one period or other of their course, there are, in addition to the prominent mental features, symptoms of disordered nutrition and secretion, of disordered sensibility, or of disordered motility. Neither in health nor in disease is the mind imprisoned in one corner of the body; and when a person is lunatic, he is, as Dr. Bucknill has remarked, lunatic to his fingers' ends.

Mental disorders are neither more nor less than nervous diseases in which mental symptoms predominate, and their entire separation from other nervous diseases has been a sad hindrance to progress. When a blow on the head has paralyzed sensibility and movement, in consequence of the disease in the brain which it has initiated, the patient is sent to the hospital; but when a blow on the head has caused mental derangement, in consquence of the disease of brain which it has initiated, the patient is sent to an asylum. In like manner, one man who has unluckily swallowed the eggs of a tænia, and has got a cysticercus in the brain, may go to the hospital; another, who has been similarly unlucky, goes to an asylum. Syphilitic disease of the brain or its arteries lands one person in an asylum with mental symptoms predominant; another in an hospital with sensory and motor diseases predominant. The same cause produces different symptoms according to the part of the brain which it particularly affects. No doubt it is right that mental derangements should have, as they often require, the special appliances of an asylum, but it is certainly not right that the separation which is necessary for treatment should reach to their pathology and to the method of its study. So long as this is the case, we shall labor in vain to get exact scientific ideas concerning their causation, their pathology, and their treatment.

Clearing, then, the question as completely as possible from the haze which metaphysics has cast around it, let us ask: How comes idiocy, or insanity? What is the scientific meaning of them? We may take it to be beyond question that they are not accidents; that they come to pass, as every other event in nature does, by natural law. They are mysterious visitations only because we understand not the laws of their production, appear casualties only because we are ignorant of their causality. When a blow on the head or an inflammation of the membranes of the brain has produced derangement of mind, we need not look further for a cause; the actual harm done to structure is sufficient to account for disorder of function in the best constituted and best developed brain. But it is only in a small proportion of cases of insanity that we can discover such a direct physical occasion of disease. In a great many cases—in more than half, certainly, and perhaps in five out of six—there is something in the nervous organization of the person, some native peculiarity, which, however we name it, predisposes him to an outbreak of insanity. When two persons undergo a similar moral shock, or a similar prolonged anxiety, and one of them goes mad in consequence, while the other goes to sleep and goes to work and recovers his equanimity, it is plain that all the coöperating conditions have not been the same, that the entire cause has been different. What, then, has been the difference? In the former case there has been present a most important element which was happily wanting in the latter—there has been a certain hereditary neurosis, an unknown and variable quantity in the equation.

Perhaps of all the erroneous ideas concerning mind which metaphysics has engendered or abetted, there is none more false than that which tacitly assumes or explicitly declares that men are born with equal mental capacity, opportunities and education determining the differences of subsequent development. The opinion is as cruel as it is false. What man can by taking thought add one cubic to either his mental or to his bodily stature? Multitudes of human beings come into the world weighted with a destiny against which they have neither the will nor the power to contend; they are step-children of nature, and groan under the worst of tyrannies—the' tyranny of a bad organization. Men differ, indeed, in the fundamental characters of their minds as they do in the features of their countenances, or in the habits of their bodies; and between those who are born with the potentiality of a full and complete mental development, under favorable circumstances, and those who are born with an innate incapacity of mental development, under any circumstances, there exists every gradation. What teaching could ever raise the congenital idiot to the common level of human intelligence? What teaching could ever keep the inspired mind of the man of genius at that level?

The congenital idiot is deprived of his human birthright; for he is born with such a defect of brain that he cannot display any, or can only display very feeble and imperfect, mental functions. From no fault of his own is he thus afflicted, seeing that he must be held innocent of all offense, but the offense of his share of original sin; but it is nowise so clear that it is not some fault of his parents. It is all too true that, in many cases, there has observably been a neglect or disregard of the laws which govern the progress of human development through the ages. Idiocy is, indeed, a manufactured article; and although we are not always able to tell how it is manufactured, still its important causes are known, and are within control. Many cases are distinctly traceable to parental intemperance and excess. Out of 300 idiots in Massachusetts, Dr. Howe found as many as 145 to be the offspring of intemperate parents; and there are numerous scattered observations which prove that chronic alcoholism in the parent may directly occasion idiocy in the child. I think, too, that there is no reasonable question of the ill effect of marriages of consanguinity; that their tendency is to produce degeneracy of the race, and idiocy as the extremest form of such degeneracy. I do not say that *all* the children of such marriages may not sometimes be healthy, and *some* of them quite healthy at other times; but the general result of breeding in and in is to produce barrenness and sterility, children of a low degree of viability, and of imperfect mental and physical development—deaf-mutism and actual imbecility or idiocy. Again, insanity in the parent may issue in idiocy in the offspring, which is, so to speak, the natural term of mental degeneracy when it proceeds unchecked through generations. It may be affirmed with no little confidence, that if the experiment of inter-marrying insane persons for two or three generations were tried, the result would be sterile idiocy and extinction of the family. Certain unfavorable conditions of life tend unquestionably to produce degeneracy of the individual; the morbid predisposition so generated is then transmitted to the next generation, and, if the unfavorable conditions continue, is aggravated in it; and thus is formed a morbid variety of the human kind, which is incapable of being a link in the line of progress of humanity. Nature puts it under the ban of sterility, and thus prevents the permanent degradation of the race. Morel has traced through four generations, the family history of a youth who was admitted into the asylum at Rouen in a state of stupidity and semi-idiocy; the summary of which may fitly illustrate the natural course of degeneracy when it goes on through generations.

First generation: Immorality, depravity, alcoholic excess, and moral degradation, in the great-grandfather, who was killed in a tavern brawl.

Second generation: Hereditary drunkenness, maniacal attacks, ending in general paralysis in the grandfather.

Third generation: Sobriety, but hypochondriacal tendencies, delusions of persecutions, and homicidal tendencies, in the father.

Fourth generation: Defective intelligence. First attack of mania at sixteen; stupidity, and transition to complete idiocy. Furthermore, probable extinction of the family; for the generate functions were as little developed as those of a child of twelve years of age. He had two sisters who were both defective, physically and morally, and were classed as imbeciles. To complete the proof of heredity in this case, Morel adds that the mother had a child while the father was confined in the asylum, and that this adulterous child showed no signs of degeneracy.

When epilepsy in young children leads to idiocy, as it often does, we must generally look for the deep root of the mischief in the family neurosis.

No one can well dispute that in the case of such an extreme morbid variety as a congenital idiot is, we have to do with a defective nervous organization. We are still, however, without more than a very few exact descriptions of the brains of idiots. Mr. Marshall has recently examined and described the brains of two idiots of European descent. He found the convolutions to be fewer in number, individually less complex, broader and smoother than in the apes; "in this respect," he says, "the idiots' brains are even more simple than that of the gibbon, and approach that of the baboon." The condition was the result neither of atrophy nor of mere arrest of growth, but consisted essentially in an imperfect evolution of the cerebral hemispheres or their parts, dependent on an arrest of development. The proportion of the weight of brain to that of body was extraordinarily diminished. We learn, then, that when man is born with a brain no higher—indeed lower—than that of an ape. he may have the convolutions fewer in number, and individually less complex, than they are in the brain of the chimpanzee and an orang; the human brain may revert to, or fall below, that type of development from which, if the theory of Darwin be true, it has gradually ascended by evolution through the ages.

With the defect of organ there is a corresponding defect of function. But there is sometimes more than a simple defect. A curious and interesting fact, which has by no means yet received the consideration which it deserves, is that, with the appearance of this animal type of brain in idiocy, there do sometimes appear or reappear remarkable animal traits and instincts. There is a class of idiots which may justly be designated *theroid*, so like brutes are the members of it. The stories of so-called wild men, such as Peter the wild boy, and the young savage of Aveyron, who ran wild in the woods, and lived on acorns and whatever else they could pick up there, were certainly exaggerated at the time. These degraded beings were evidently idiots, who exhibited a somewhat striking aptitude and capacity for a wild animal life. Dr. Carpenter, however, quotes the case of an idiot girl who was seduced by some miscreant, and who, when she was delivered, gnawed through the umbilical cord as some of the lower animals do. And Dr. Crichton Browne, of the West Riding Asylum, records a somewhat similar case in a young woman, not an idiot naturally, but who had gone completely demented after insanity. She had been in the habit of escaping from home, and of living in solitude in the woods, feeding upon wild fruits, or what she could occasionally beg at a cottage, and sleeping in the brushwood. She had frequently lived in this manner for a fortnight at a time. During one of these absences she was delivered of twins; she had sought out a sheltered hollow, and there, reverting to a primitive instinct, gnawed through the umbilical cord. The twins were alive when found, two days after birth, but the mother was in a very exhausted state, having had no food or covering since her delivery. "We have at Salpetrière," says Esquirol, "an imbecile woman, who used to earn a few sous by doing rough household work. It happened on several occasions that as soon as she got her sous she took them to a laborer, and gave herself up to his brutality; but when she was pregnant she went no more to him."

In the conformation and habits of other idiots the most careless observer could not help seeing the ape. A striking instance of this kind is described by Dr. Mitchell, Deputy Commissioner in Lunacy for Scotland. "I have never," he says, "seen a better illustration of the ape-faced idiot than in this case. It is not, however, the face alone that is ape-like. He grins, chatters, and screams like a monkey, never attempting a sound in any way resembling a word. He puts himself in the most ape-like attitude in his hunts after lice, and often brings his mouth to help his hands. He grasps what he brings to his mouth with an apish hold. His thumbs are but additional fingers. He has a leaping walk. He has heavy eyebrows, and short hair on his cheeks or face. He is muscular, active, and not dwarfish. He sits on the floor in ape fashion, with his genitals always exposed. He has filthy habits of all kinds. He may be called an idiot of the lowest order; yet there is a mischievous, brute-like intelligence in his eye. His head is not very small, its greatest circumference being twenty inches and a half, but in shape it strongly exhibits the ape-form of abnormality."

Pinel has recorded the case of an idiot who was something like a sheep, both in respect of her tastes, her mode of life, and the form of her head. She had an aversion to meat, and ate fruit and vegetables greedily, and drank nothing but water. Her demonstrations of sensibility, joy, or trouble, were confined to the repetition of the ill-articulated words, *bè*, *ma*, *bah*. She alternately bent and raised her head, and rubbed herself against the belly of the girl who attended her. If she wanted to resist or express her discontent, she tried to butt with the crown of her head; she was very passionate. Her back, her loins, and shoulders were covered with flexible and blackish hairs, one or two inches long. She never could be made to sit upon a chair or bench, even when at meals; as soon as she was placed in a sitting posture, she glided on the floor. She slept on the floor in the posture of animals.

Dr. Crichton Browne has now under care, in the West Riding Asylum, a deformed idiot girl, who, in general appearance and habits, has points of resemblance to a goose; so much so, that the nurses who received her described her as just like "a plucked goose." Her father died in the asylum, and her mother's sister was also a patient in it at one time. She is four feet two inches in height, has a small head, and thin and scanty hair, so that the crown of the head is partially bald. The eyes are large, round, prominent and restless, and are frequently covered by the eyelids, as if by a slow, forcible effort at winking. The lower jaw is large, projecting more than one inch beyond the contracted upper jaw, and possesses an extraordinary range of antero-posterior, as well as lateral, movement; the whole configuration of the lower part of the face having a somewhat bill-like appearance. The neck is unusually long and flexible, and is capable of being bent backwards so as actually to touch the back between the scapulæ. The cutis anserina is general over the body, but is most marked on the back and dorsal aspects of the limbs, where it looks exactly as if it had been just deprived of feathers. The inferior angles of the scapulæ stand prominently out, and moving freely with the movements of the arms have precisely the appearance of rudimentary wings. The girl utters no articulate sounds, but expresses pleasure by cackling like a goose, and displeasure by hissing or screaching like a goose, or perhaps like a macaw. When angry, she flaps her arms against her sides, and beats her feet upon the floor. She knows her own name, and understands one or two short sentences, such as "Come here" and "Put out your hand." She recognizes the persons who attend upon her and feed her, and is much agitated if touched by a stranger. She cannot feed herself, but swallows voraciously all that is put into her mouth, showing no preference for one article of diet over another. She is dirty in her habits, and no amount of attention has improved her in this respect. She is very fond of her bath, cackling when she is put into it, and screeching when she is taken out of it.

It is a natural question, Whence come these animal traits and instincts in man? Whence was derived the instinct which taught the idiot woman to gnaw through the umbilical cord? Was it really the reappearance of a primitive instinct of animal nature —a faint echo from a far distant past testifying to a kinship which man has almost outgrown, or has grown too proud to acknowledge? No doubt such animal traits are marks of extreme human degeneracy, but it is no explanation to call them so; degenerations come by law, and are as natural as natural law can make them. Instead of passing them by as abnormal, or, worse still, stigmatizing them as unnatural, it behooves us to seek for the scientific interpretation which they must certainly have. When we reflect that every human brain does, in the course of its development, pass through the same stages as the brains of other vertebrate animals, and that its transitional states resemble the permanent forms of their brains; and when we reflect further, that the stages of its development in the womb may be considered the abstract and brief chronicle of a series of developments that have gone on through countless ages in nature, it does not seem so wonderful, as at the first blush it might do, that it should, when in a condition of arrested development, sometimes display animal instincts. Summing up, as it were, the leading forms of the vertebrate type, there is truly a brute brain within the man's; and when the latter stops short of its characteristic develoment as *human*—when it remains arrested at or below the level of an orang's brain, it may be presumed that it will manifest its most primitive functions, and no higher functions.

I am not aware of any other considerations than those just adduced which offer even the glimpse of an explanation of the origin of these animal traits in man. We need not, however, confine our attention to idiots only. Whence come the savage snarl, the destructive disposition, the obscene language, the wild howl, the offensive habits, displayed by some of the insane? Why should a human being deprived of his reason ever become so brutal in character as some do, unless he has the brute nature within him? In most large asylums there is one, or more than one, example of a demented person who truly ruminates; bolting his food rapidly, he retires afterward to a corner, where, at his leisure, he quietly brings it up again into the mouth and masticates it as the cow does.

I should take up a long time if I were to enumerate the various brute-like characteristics that are at times witnessed among the insane; enough to say that some very strong facts and arguments in support of Mr. Darwin's views might be drawn from the field of morbid psychology. We may, without much difficulty, trace savagery in civilization, as we can trace animalism in savagery; and in the degeneration of insanity, in the *unkinding*, so to say, of the human kind, there are exhibited marks denoting the elementary instincts of its composition.

It behooves us, as scientific inquirers, to realize distinctly the physical meaning of the progress of human intelligence from generation to generation. What structural differences in the brain are implied by it? That an increasing purpose runs through the ages, and that "the thoughts of men are widened with the process of the suns," no one will call in question; and that this progress has been accompanied by a progressive development of the cerebral hemispheres, the convolutions of which have increased in size, number and complexity, will hardly now be disputed. Wether the fragments of ancient human crania which have been discovered in Europe do or do not testify to the existence of a barbarous race that disappeared before historical time, they certainly mark a race not higher than the lowest surviving human variety. Dr. Pritchard's comparison of the skulls of the same nation at different periods of its history led him to the conclusion that the present inhabitants of Britain, "either as the result of many ages of great intellectual cultivation, or from some other cause, have much more capacious brain cases than their forefathers."

Yet stronger evidences of a growth of brain with the growth of intelligence is furnished by an examination of the brains of existing savages. Gratiolet has figured and described the brain of the Hottentot Venus, who was nowise an idiot. He found a striking simplicity and a regular arrangement of the convolutions of the frontal lobes, which presented an almost perfect symmetry in the two hemispheres, involuntarily recalling the regularity and symmetry of the cerebral convolutions in the lower animals. The brain was palpably inferior to that of a normally developed white woman, and could only be compared with the brain of a white idiotic from arrest of cerebral development.

Mr. Marshall has also recently examined the brain of a Bushwoman, and has discovered like evidence of structural inferiority; the primary convolutions, although all present, were smaller and much less complicated than in the European; the external connecting convolutions were still more remarkably defective; the secondary sulci and convolutions were everywhere decidedly less developed; there was a deficiency of transverse commissural fibres; and in size, and every one of the signs of comparative inferiority, "it leaned, as it were, to the higher quadrumanous forms." The developmental differences between this brain and the brain of a European, were, in fact, of the same kind as, though less in degree, than those between the brain of an ape and that of man. Among Europeans the average weight of the brain is greater in educated than in uneducated persons; its size—other circumstances being equal—bearing a general relation to the mental power of the individual. Dr. Thurnam concludes, from a series of carefully compiled tables, that while the average weight of the brain in ordinary Europeans is 49 ounces, it is 54.6 ounces in distinguished men; and Professor Wagner found a remarkably complex arrangement of the convolutions in the brains of five very eminent men which he examined. Thus, then, while we take it to be well established that the convolutions of the human brain have undergone a considerable development through the ages, we may no less justly conclude that its larger, more numerous, and complex convolutions reproduce the higher and more varied mental activity to the progressive evolution of which their progressive increase has answered—that they manifest the kind of function which has determined the structure. The vesicular neurine has increased in quantity and in quality, and the function of the increased and more highly endowed structure is to display that intelligence which it unconsciously embodies. The native Australian, who is one of the lowest existing savages, has no words in his language to express such exalted ideas as justice, love, virtue, mercy; he has no such ideas in his mind, and cannot comprehend them. The vesicular neurine which should embody them in its constitution and manifest them in its function, has not been developed in his convolutions; he is as incapable, therefore, of the higher mental displays of abstract reasoning and moral feeling as an idiot is, and for a like reason. Indeed, were we to imagine a person born in this country, at this time, with a brain of no higher development than the brain of an Australian savage or a Bushman, it is perfectly certain that he would be more or less of an imbecile. And the only way, I suppose, in which beings of so low an order of development could be raised to a civilized level of feeling and thought would be by cultivation continued through several generations; they would have to undergo a gradual process of humanization before they could attain to the capacity of civilization.

Some, who one moment own freely the broad truth that all mental manifestations take place through the brain, go on, nevertheless, to straightway deny that the conscience or moral sensibility can be a function of organization. But if all mental operations are not in this world equally functions of organization, I know not what warrant we have for declaring any to be so. The solution of the much vexed question concerning the origin of the moral sense seems to lie in the considerations just adduced. Are not, indeed, our moral intuitions results of the operation of the fundamental law of nervous organization by which that which is consciously acquired becomes an unconscious endowment, and is then transmitted as more or less of an instinct to the next generation? They are examples of knowledge which has been hardly gained through the suffering and experience of the race being now inherited as a natural or instinctive sensibility of the well constituted brain of the individual. In the matter of our moral feelings we are most truly the heirs of the ages. Take the moral sense, and examine the actions which it sanctions and those which it forbids, and thus analyse, or, as it were, decompose, its nature, and it will be found that the actions which it sanctions are those which may be proved by sober reason to be conducive to the well-being and the progress of the race, and that its prohibitions fall upon the actions which, if freely indulged in, would lead to the degeneration, if not extinction, of mankind. And if we could imagine the human race to live back again to its earliest infancy—to go backwards through all the scenes and experiences through which it has gone forward to its present height—and to give back from its mind and character at each time and circumstance, as it passed it, exactly that which it gained when it was there before,—should we not find the fragments and exuviæ of the moral sense lying here and there along the retrograde path, and a condition at the beginning which, whether simian or human, was bare of all true moral feeling?

We are daily witnesses of, and our daily actions testify to, the operation of that plastic law of nervous organization by which separate and successive acquisitions are combined and so intimately blended as to constitute apparently a single and undecomposable faculty; we observe it in the formation of our volitions, and we observe it, in a more simple and less disputable form, in the way in which combinations of movements that have been slowly formed by practice are effected finally as easily as if they were a single and simple movement. If the moral sense—which is derived, then, insomuch, as it has been acquired in the process of human development through the ages—were not more or less innate in the well-born individual of this age, if he were obliged to go, as the generations of his forefathers have gone, through the elementary process of acquiring it, he would be very much in the position of a person who, on each occasion of writing his name, had to go through the elementary steps of learning to do so. The progressive evolution of the human brain is a proof that we do inherit as a natural endowment the labored acquisitions of our ancestors; the added structure represents, as it were, the embodied experience and memories of the race; and there is no greater difficulty in believing that the moral sense may have been so formed, than in believing what has long been known and is admitted on all hands, that the young fox or young dog inherits as an instinct the special cunning which the foxes and the dogs that have gone before it have had to win by hard experience.

These remarks are not an unnecessary digression. Nor will they have been made in vain if they serve to fix in our minds the conviction that the law of progressive evolution and specialization of nerve-centres, which may be traced generally from the first appearance of nerve-tissue in the lowest animals to the complex structure of the nervous system of man, and especially from the rudimentary appearance of cerebral convolutions to the numerous and complex convolutions of the human brain, does not abruptly cease its action at the vesicular neurine of the hemispheres, but continues in force within the intimate recesses of the mental organization. Moreover, they are specially to the purpose, seeing that they enable us to understand in some sort how it is that a perversion or destruction of the moral sense is often one of the earliest symptoms of mental derangement: as the latest and most exquisite product of mental organization, the highest bloom of culture, it is the first to testify to disorder of the mind-centres. Not that we can detect any structural change in such case; it is far too delicate for that. The wonder, would, indeed, be if we could discover such more than miscroscopical changes with the instruments of research which we yet possess. We might almost as well look to discover the anatomy of a gnat with a telescope.

(To be Continued.)

TRAUMATIC TETANUS CURED BY CHLORAL.

M. VERNEUIL has presented a note to the French Académie des Sciences, by the hands of M. Wurtz, in which he observes that, experiment having established the fact that chloral is antagonistic in its action to strychnine, it might almost be anticipated that it would prove useful in tetanus. And this hope seems to be realized, for M. Liebreich has already reported a case of rapid recovery from trismus under its use. A second still more demonstrative instance is afforded by a case that has just occurred in the Lariboisière Hospital. The patient was a young and healthy mason, who, at the end of January crushed the extremity of the right radius with a stone. On the eighth day tetanus supervened, and quickly extended to the muscles of the face, jaws, neck, spine, abdomen, and lower limbs. The pain was intense and persistent. Subcutaneous injections of hydrochlorate of morphia, and the internal use of chloral, were simultaneously employed. The action of the latter was prompt and decisive, the contraction of the muscles diminishing, and the pain being allayed almost instantaneously, succeeded by long and profound sleep. The chloral being intermitted, the symptoms reappeared, to vanish again as soon as it was recommenced. A month elapsed before complete recovery took place. The daily doses amounted to from one drachm and a half to three drachms, administered in water. No derangement of the stomach was produced, and the patient was able to digest easily a very abundant dietary. A case of a similar nature is reported to be under the care of MM. Dubreuil, Lavaux and Onimus.—*London Lancet.*

Loss of Speech after Chloroform.—A servant girl, says the *Allg. Med. Centr. Zeit.*, for the sake of the extraction of a tooth, inhaled chloroform for a very short time. On awakening she had lost the power of speech, could not utter any sound whatever, and remained in that state for five weeks, in spite of various remedies, especially electricity. After this time she began to speak in a low tone, and was put under appropriate treatment. It is supposed that she suffered during anæsthesia from rupture of some cerebral vessel.

Pharmacy.

Bromide of Sodium.—This salt, which is now frequently prescribed as a substitute for the bromide of potassium, may be prepared conveniently by the following process:

Take of bromide of ammonium............ ℥xii.
Carbonate of soda (cryst.)......... ℥xvi+gr. x c.
Water, a sufficient quantity.

Dissolve the salts separately in a minimum quantity of hot water, mix the solutions, and evaporate to dryness, stirring constantly towards the close of the process to obtain the salt in a granular form. Abundant fumes of ammonium carbonate are evolved during the operation, which should be conducted in a place where there is a free circulation of air. The resulting salt should be neutral to test paper. If it be found strongly alkaline, too large a proportion of sodium carbonate has been used. The product must be placed in well stopped bottles as soon as it is sufficiently cool. In operating on a large scale, the dry salts may be mixed in a suitable subliming apparatus and heated till the carbonate of ammonia has wholly sublimed.

It must be borne in mind, in prescribing, that this is a very deliquescent compound, not adapted, therefore, for exhibition in the form of powders. It has a taste scarcely to be distinguished from that of common salt, and may, in fact, be administered sometimes with the food under the guise of a condiment. The anhydrous salt contains a larger proportion of bromine, weight for weight, than the bromide of potassium, nearly as much, in fact, as the ammonium salt, while it is said to be less likely than either of these to disagree with delicate stomachs.

CHLORAL HYDRATE.—Chloral hydrate is now purified by crystallization from pure bi-sulphide of carbon. One part of the hydrate is dissolved in five parts bi-sulphide of carbon with the aid of heat, and the solution is allowed to cool slowly, when nearly the whole of the hydrate separates in fine prismatic crystals. Chloral combines with alcohol as well as with water, forming an alcoholate which sometimes finds its way into the market by fraudulent substitution for the hydrate, which it much resembles in appearance and properties. The equivalent weight of alcohol is much greater than that of water, hence, while the hydrate contains 94 per cent of its weight of chloral, the alchoholate contains but 76 per cent.

Dr. Hager proposes the following plan for the detection of alcohol in suspected specimens of chloral hydrate. The specimen is dissolved in water, about ten drops of liquor potassæ are added, followed by a few drops of Lugol's solution, added drop by drop, until a permanent yellowish color is produced. Finally, the solution is decolorized by cautious addition of a fresh portion of liquor potassæ. If alcohol be present, iodoform is produced, rendering the liquid permanently turbid, and after a time depositing in minute shining yellow crystals, easily recognized under the microscope. The crystals are not always formed, owing to the solubility of iodoform in fluids containing chloral. It will be remembered that the iodoform test for alcohol is of no value in presence of sugar, lactic acid, gums, wood spirit, many of the volatile oils, etc.

Another means of distinguishing alcoholate of chloral from the hydrate is found in the action of nitric acid of moderate strength. The presence of alcohol is indicated by abundant evolution of nitrous fumes, on applying a gentle heat; pure hydrate of chloral is but slightly acted on by the acid.

"ACCIDENTAL" POISONING BY STRYCHNINE—A WARNING TO PHYSICIANS.—A case of fatal poisoning by an overdose of strychnia, which occurred not long since, illustrates forcibly the necessity of an accurate knowledge, on the part of every physician who prescribes potent medicines, of the chemical properties and deportment of those medicines. The circumstances of the case, as detailed by Mr. Charles Bullock in the *American Journal of Pharmacy*, are as follows: The patient had been laboring under an attack of partial paralysis, and the physician had ordered the following prescription:

℞. Strychniæ muriatis	gr. iss.
Liq. ferri iodidi	ʒvj.
Syr. Zinziberis q. s. at ft.	℥iij.

M. Liq. Dose, a teaspoonful.

The first bottle was taken, with apparent benefit to the patient, and the prescription was renewed, the dose being increased by one half. About an hour after taking the last dose, the patient manifested the usual symptoms of strychnine poisoning, and in spite of medical aid, promptly rendered, death ensued in a few hours. The bottle which had contained the medicine was found quite empty, but adhering to its sides were crystals of considerable size, consisting doubtless of iodide of strychnia.

The pharmaceutist who compounded the prescription testified "that he weighed out the muriate of strychnia, threw it into a graduated measure, added the other ingredients and stirred them up with a bone spatula till he thought the strychnia salt had all dissolved." He observed an opalescent appearance in the mixture, but could see no residue of solid matter or undissolved crystals. The same prescription was sent to several prominent pharmaceutists to be compounded, and the results were handed to the jury for inspection. In some the mixture seemed quite free from suspended matter, in others crystals of iodide of strychnia were plainly visible, floating in the fluid, or deposited on the bottom of the bottle. In one bottle, crystals of undissolved muriate of strychnia were found.

The coroner's jury, composed of physicians and pharmaceutists, returned a verdict of "Death from prostration, following the accidental administration of an overdose of strychnia." It was added: "The jury further find, from examination of the assistant pharmaceutist by whom the prescription was compounded, a want of proper attention to, or information in manipulation, which they cannot pass by without notice and reprimand, as both efficiency and safety may depend on careful manipulating skill when potent medicines are prescribed. They further find that the ingredients of the prescription are subject to such chemical changes as render the strychnia contained therein *liable* to be precipitated to the bottom of the bottle containing the prescription; and if the bottle should remain without proper agitation, an overdose of strychnia might result."

IODOFORMUM.

By J. Henry Carstens, M. D.

As to some of the readers of the *Review*, the mode of preparing this article, while to others its therapeutic uses, may be of interest, I may be allowed to write a few words about this compound, which has come into such sudden and extensive demand.

Teriodide of formyl, or sesquiïodide of carbon as it was formerly called, has a chemical composition of $C\ H\ I_3$. It was discovered in the year 1822 by Sérullas, who procured it by adding chlorinated lime to an alcoholic solution of iodide of potassium. Claimed by Dumas to be analogous to formic acid, the iodine taking the place of the oxygen (also, chloroform and the like preparations).

A good method for making this compound is given by Wittstein. Two parts of carbonate of potassa, two parts of iodine, one part of alcohol and five of water, are mixed in a retort, which is then heated by means of a water-bath till the contents are perfectly colorless. After the retort has cooled, the liquid is poured into a beaker and allowed to settle. The yellow, scaly mass is then collected on a filter, washed thoroughly with water, and dried between filter paper. Reaction (according to new nomenclature): $6\ (K_2\ C\ O_3) + 16\ I + 2\ (C_2\ H_5\ HO)$. Five atoms of oxygen of the carbonate of potassa join $2\ (C_2\ H_5\ HO)$ forming $2\ (H\ C\ H\ O_2) + 3\ H_2\ O) + 2\ (C\ H)$. $2\ (H\ C\ H\ O_2)$ combines with $K_2\ O = 2\ (K\ C\ H\ O_2, \cdot H_2\ O)$, while $10\ K + 10\ I = 10\ (K\ I)$ and $6\ I$ and the $2\ (C\ H)$ of the alcohol form $2\ (C\ H\ I_3)$, carbonic acid escaping.

According to this, the gain of iodoform would be 38 per cent, but the reaction never takes place so completely, and we must remember that all these changes take place at once, and that iodoform is very volatile (must never be made in an open vessel); the alcohol evaporates and must be used in larger quantities; the excess of carb. of potass. does not retard, but seems to increase the reaction.

By using six ounces of iodine only one ounce of iodoform is collected, or about 17 per cent. It would therefore be very expensive if we could not make use of the filtrate for making iodide of potassium. This liquid contains, beside traces of iodoform, the balance of the iodine as iodate of potassa and iodide of potassium, and also formate and carbonate of potassa.

Evaporate this solution to dryness and triturate with one-eighth of its weight of charcoal, and then heat to redness for a short time in an iron crucible, then digest in alcohol and filter; the residue is carbonate of potass., while the filtered solution contains the iodide of potassium; the alcoholic solution is evaporated and allowed to crystallize. By this means no iodine is lost, and teriodide of formyl ought to be not more expensive than iodine.

Iodoform appears in the shape of yellow, shining, six-sided scales, with a spicy odor (like saffron or iodine and chloroform); is volatile at ordinary temperature. Almost insoluble in water (one part in 13,000), but more so in alcohol (one part in 80). If it be used in a mixture, must avoid alcoholic solution of potassa, which decomposes it, forming formate of potassa, and iodide of potassium: $CHI_3 + 2(K_2O) = KCHO_2 + 3(KI)$.

Besides the well known effects of iodine and its preparation, iodoform has the advantage of the former preparation of being stronger and more uniform in its action on the system; that is, does not corrode, nor act as a local irritant, and that, therefore, it may be given uninterruptedly. It is anodyne, and, consequently, often useful in neuralgia, produces, also, a local and partial anæsthesia of the colon. It has less anæsthetic powers than chloroform, although recommended by Eugenio Franchino (*Gaz. Sarda.*, 28, 1858) as a general anæsthetic in place of chloroform. First used by English physicians in form of ointment for exanthema; used by Lichtfield in porrigo and lepra; by Glover for psoriasis, impetigo, scabies, etc., also recommended for croup (internally) and used with good success (*Monthly Journal, Feb.*, 1848). On the recommendation of Moretin and Mouzard (*l' Union*, 1857), used as a local anæsthetic, in the form of suppositories, in the prostate; it also seems to relieve tenesmus, easing defecation.

Iodoform has lately been prominently brought to the notice of physicians in this country as a remedy for chronic ulcers (Proc. Penn. State Med. Soc., 1868), obstinate neuralgia, scrofula, strumous ophthalmia, consumption, and even in cancer is stated to have relieved the excruciating pain of this malignant disease, without seeming to arrest the same (*Med and. Surg. Rep.*, Phil., Vol. 16, 17, 18). It is also a valuable dressing in chancre.

It is best administered in pill form, one to two grains, three times a day. Quevenne's iron may often be advantageously added. Externally it is used as an ointment, one-half to one drachm of iodoform to one ounce of lard, or it is dissolved in hot alcohol, and glycerine added; these to be used *pro re nata.*

Items.

THE Toland Medical College, of San Francisco, Cal., wishes to become incorporated with the University of California, and as an inducement to the union Dr. Toland proposes to donate the valuable property of the College to the University. A rival school, "The Medical Department of the University of the Pacific," the only other medical school in California, protests against this incorporation. In connection with this protest a valuable suggestion is made. It is proposed that there shall be no medical school especially connected with the State University, but on the other hand that *all* medical degrees shall be issued under the authority of the University, by a board of examiners appointed in such a way as to be acceptable to the profession at large. Such a system has operated successfully in connection with the University of London, which gives no medical instruction, but merely confers degrees. Wherever this system has been adopted it has been followed by the best results, especially increasing the value of the diploma.

DR. JAMES BLAKE, in the California *Medical Gazette*, records a case of diabetes melitus, in which psoriasis of the legs also existed, "the legs being covered with scaly epidermis, which was shed in large quantities. Both the psoriasis and the diabetes disappeared under the influence of an animal diet."

THE pancreatic emulsion of solid fat (beef) prepared by Savory & Moore, of London, Eng., is a new preparation, highly recommended for consumptives.

A State Hospital for diseases of the nervous system has been established in New York, with Dr. Wm. A. Hammond as chief physician. It claims to be the first hospital of the kind established in this country. A temporary hospital for nervous diseases was established in Philadelphia during the war by means of which many interesting data were obtained.

Sir Henry Thompson presented a paper recently to the Royal Medical and Chirurgical Society, in which he gave a complete analysis of 184 cases of *stone in the bladder* of the adult, treated by *crushing*. The mortality was seven per cent; or, omitting five cases of death by no means owing to the operation, the mortality was only four per cent. His rule of practice is to crush all calculi of apparently less than an ounce in weight and to operate on all larger ones by lithotomy. This paper, insomuch as it gives special details of each case, is obviously one of great value.—*Medical and Surgical Rep.*

In Germany, at Dresden and Köstritz, there are establishments where hot sand baths are given to patients suffering from rheumatism.

It is said that the most fitting inscription that can be applied to Von Gräfe, the German oculist, is, " He cured glaucoma."

The members of the medical profession in France, both civil and military, are said to be poorly paid.

Women acting as nurses in the Prussian army are expected to dress plainly, without curls or chignons. The color of the bows which they wear indicates their duties.

Dr. Richardson, the English physiologist, maintains that gases pass directly through the tissues of the body, especially the coats of veins. His experiments seem to prove this. He pumped carbonic acid into the cranial cavity of a rabbit, through a tube placed in the nostril. The gas showed itself promptly in the right cavity of the heart.—*Medical and Surgical Rep.*

A case of extra-uterine pregnancy is recorded in the *Medical and Surgical Reporter*, in which the fœtus, seven months old, found its way into the bladder and was removed by lithotomy. The operation was performed by Dr. Joseph Bossuett, at Hingham, Mass., in 1816.

M. GUERIN, at the Academy of Medicine in Paris, defined *pyæmia* as a kind of surgical typhus, excited by poisonous emanations from pus and other animal decomposition.

DR. S. WEIR MITCHELL finds that narcotine, almost inert in man, destroys birds when used hypodermically in doses of from two to five grains.

AN article defending the use of chloroform in labor, by Dr. L. P. Yandell, appears in the *American Practitioner* for September. He prefers chloroform to ether. For most cases he would recommend partial anæsthesia.

PROF. MOOS, of Heidelberg, expresses the belief, founded on careful investigations in man and the lower animals, "that the Eustachian tube is *closed* in a state of rest, and that in man the closure is effected by a cone-like intumescence of the mucous membrane."—*Archives of Ophth. and Otology.*

A CASE of cysticercus intra-ocularis is mentioned in the *Archives of Ophth. and Otology*, in which the patient had no symptoms of tapeworm in any other locality. His wife, however, had passed large pieces from the bowels. The eyeball was necessarily removed by operation, and the rest of the cysticercus readily seen. Total blindness in the eye had existed for two years, but within a few days only, active inflammation had appeared. The form and size of the eyeball were unchanged, but there was great sensibility of the ciliary region and discoloration of the parts.

DR. W. B. FLETCHER, following the suggestion of Prof. Austin Flint, Sr., has found that the use of the bromide of potassium (grs. xxx, three times a day) is highly beneficial in diabetes melitus.—*Jour. Mat. Med.*

THE Boston *Journal of Chemistry* cautions the public against the use of *galvanized iron pipe*. The zinc covering is sometimes entirely removed in forty-eight hours, and appears in the water as the carbonate, the oxide or the chloride of zinc.

THE St. Joseph, Mo., *Herald* tells a story of a girl who was bitten by a rattlesnake when four years of age. She had fits monthly from that time till she was nine years old, when she died in a fit of unusual severity, occurring at an unusual time.

DR. WM. COMMONS furnishes some interesting instances of the "contagion of phthisis" to the Indiana *Journal of Medicine*. He also mentions a remarkable case in which a woman was evidently saved from consumption by marrying a healthy man.

SIR WM. JENNER thinks that where both parents are tubercular the diathesis is intensified in their offspring. The same he believes to be the case generally in the hereditary transmission of disease. The father, he thinks, transmits a morbid tendency with more certainty than the mother does.—*Lancet.*

M. DECAISNE, in the *Archives Générales*, asserts that females engaged in working sewing machines are not more subject than other laboring women to metrorrhagia, miscarriage, leucorrhœa and peritonitis, and that the facts which have been adduced in favor of such a view were simple coincidences, and the result of excessive labor.—*American Practitioner.*

IT is stated that twenty-five per cent of the graduates of Yale College never marry.

Editorial.

PROBABILITIES OF INSANITY.

HEREDITARY insanity is a subject of very general interest, and has received a very considerable degree of attention from medical writers. It is interesting not merely to physiologists, but to all classes of persons.

A prominent railroad company recently contemplated the appointment of an officer in whose family there had been evidences of insanity. In view of this fact, coupled with certain peculiarities in the individual, the company were advised by a distinguished physician not to make the appointment, and subsequent events fully proved the wisdom of the advice.

In connection with matrimonial alliances this question of hereditary mental disease often has great practical significance. The mere fact, however, that some relative of an individual has been an inmate of an asylum, is not, as some suppose, an indication of hereditary taint. Cases of delirium tremens, and some of mere febrile delirium find their way to asylums, while large numbers of insane patients are made so by combinations of circumstances peculiar to themselves—financial embarrassment, domestic infelicity, physical disease.

Dr. Van Deusen, of the Michigan Asylum, in a recent report, says that hereditary insanity is by no means so common as is generally supposed. In a more recent article he says: "We are constantly receiving calls and communications from persons who are suffering under a conviction that they must be at some time insane, simply because a parent at some period of life has had an attack of mental disease. That an unhealthy mental organization is often transmitted as is an unhealthy physical organization, is most true. This is one thing. But the organization inherited from a parent who may at some time during life have been submitted to a combination of causes culminating in an attack of mental disease, but in every respect a healthy person, is quite another thing. An experienced physician will at once be able to decide in fully two-thirds of the cases presented at the Asylum whether there exists in the particular case an inherited predisposition, from certain peculiarities he will readily detect."

Dr. Van Deusen further remarks that at a recent meeting of the "Association of Medical Officers of American Institutions for the Insane," he was pleased to find that the opinions of the best authorities on this subject entirely coincided with his own.

We may safely conclude, therefore, that there is a tendency in the community and among the members of the medical profession to exaggerate the number of hereditary cases of insanity. In a given case, where some member of the family has been insane, there is the best reason to hope that no trace of the disease is to be expected in other members of the family until we have studied the case and can give distinct reasons for a contrary opinion. W. H. L.

NEW YORK STATE INEBRIATE ASYLUM.

The following announcement is respectfully submitted to the consideration of the medical profession, and to the public in general:

It is believed that the experience of the past five years has demonstrated not only the utility but the necessity of the institution known as the "New York State Inebriate Asylum." We speak advisedly when we affirm that at no time has its prospects for usefulness been more promising, or has it been in so good a condition so far as the treatment of patients is concerned, as it is now. We have sought to make it what it was originally intended to be—a reformatory Christian home.

There are very many persons in our State and throughout the country, the victims of a terrible mania for drink, who need the salutary treatment which this institution affords, and who, without such aid, must in all human probability perish. We, therefore, disclaiming every object except an earnest desire to aid in restoring to their friends and to society a class of men fallen indeed, but not beyond recovery, would earnestly commend this institution as an efficient means for securing an end so important and inestimable.

We deem it proper to state that ample means are provided to meet the physical, intellectual and religious wants of the patients. The Asylum occupies a remarkably healthful and beautiful site. It is furnished with baths, and a great variety of amusements; with a good library and reading room, which is supplied with the leading daily newspapers and the American and British magazines.

The rules of the institution require *regularity* in regard to meals, the hours of retiring and rising, and the attendance on the religious exercises of the establishment.

The Asylum has been placed under the charge of Dr. Daniel

G. Dodge, a man of superior administrative qualifications, and towards whom there is but one sentiment prevailing with the officers of the Institution and among the patients—that of profound respect for him as a Christian gentleman, and confidence in him as a skillful physician.

WILLARD PARKER, M. D.,
New York City,
Pres't Board Trustees.

Rev. SAMUEL W. BUSH,
Register.

BINGHAMTON, N. Y., Oct. 1, 1870.

PULICATIONS RECEIVED.

THE RAISING AND EDUCATION OF ABANDONED CHILDREN IN EUROPE. A report read before the Medical Board of the Infants' Hospital, Randall's Island N. Y., by Abraham Jacobi, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, etc.

The facts embodied in this pamphlet are derived from both European and American cities. The laws providing for abandoned children in different countries are stated, and the results attending them. Statistical tables of great value in the study of this subject are embodied in the work.

Experience has clearly shown, the author says, that infants do not thrive unless they are provided with *wet nurses.* One wet nurse may, however, often attend to two infants and feed them at the same time from the bottle.

Infants should not be congregated in hospitals. They thrive best when placed in private homes, even though the families with whom they are placed are in very poor circumstances. "A large institution is the very place a young infant ought to be kept out of." This principle is now recognized "in all Europe. Therefore the former foundling institutions are nothing at present but depots for temporary admission, and speedy distribution throughout the country."

Infants are frequently abandoned by mothers from their inability to take care of them. Efforts are constantly made, therefore, to induce the mother, by aid of a subsidy, to retain the child. The paid nurse often fails to exhibit "the self-sacrificing patience and the everlasting attention which are absolute requisites for the sustenance of a young human being." Statistics clearly show that infants thrive better in the country than in cities.

OBSTETRIC OPERATIONS; including the treatment of Hemorrhage. By Robert Barnes, M. D., London, F. R. C. P. With additions by Benjamin Dawse, M. D. New York: D. Appleton & Co. 1870.

The reputation of Dr. Barnes as an obstetrician entitles us to expect much of value in anything that emanates from his pen, and in the work before us we are not disappointed; the various accidents of labor requiring interference are discussed clearly in the light of the latest discoveries of science. The first 100 pages are devoted to the consideration of the indications for the use of and the various methods for the application of the forceps, both long and short. The latter instrument, the author thinks, may be, in the majority of cases, dispensed with, the former possessing many advantages. Subsequent chapters treat of turning, spontaneous evolution, craniotomy, cæsarian section, induction of premature labor, uterine hemorrhage and twin labor. Altogether, the work is one which we can commend highly, especially to physicians who have not opportunities for consultation in difficult cases.

A TREATISE ON THE THEORY AND PRACTICE OF OBSTETRICS. By Wm. H. Byford A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College. Pp. 457. Wm. Wood & Co., New York. 1870.

Prof. Byford, in the present work, has aimed to give to the profession a text book which shall give to the student and practitioner concisely what is coming up for his attention day by day, omitting the discussion of mooted points, and the free quotation of various views from different authors.

The illustrations are sufficiently numerous and well executed, and the typographical character of the book is praiseworthy.

DETROIT

Review of Medicine and Pharmacy.

VOL. V. NOVEMBER, 1870. No. 11.

STRICTURE OF THE URETHRA.

By T. A. McGraw, M. D., Professor of Surgery in Detroit Medical College.

Two cases of stricture of the urethra will illustrate different modes of treatment.

James K., a hackman, 31 years of age, had an attack of gonorrhœa in 1866. The disease never entirely subsided, and a gleety discharge continued, with intervals of apparent cure, until January, 1870. There had, during this time, been an increasing difficulty in urinating, and he was finally obliged to seek surgical advice. In January, 1870, he came under the care of Dr. Noyes, who repeatedly sounded him, discovered strictures, and finally advised him to enter the hospital and submit to an operation for radical cure.

He entered St. Mary's on January 27th. On the following Tuesday I brought him before the class of students of the Detroit Medical College, had him placed under the influence of ether, and examined him with great care. The examination revealed two strictures, one in the spongy portion of the urethra near the bulb, and one in the membranous portion. Through these strictures a No. 4 catheter could be passed with difficulty. I proceeded to operate by Holt's method, of sudden and forcible dilatation. Holt's instrument, as is well known, consists of a split catheter, size No. 3, inclosing a small tube which serves as a guide to hollow cylinders of various sizes, by means of which the dilatation is effected. The catheter having been passed, after some trouble, and its entrance into the bladder indicated by the passage of urine, the cylinders were passed one by one over the guiding tube. In this way the urethra was rendered permeable to a No. 12 catheter. During the operation, in which the stricture must have been enormously stretched, there was no sensation of tearing or snapping, such as would naturally have occurred, had they been suddenly ruptured. A catheter (No. 10) was fastened in the bladder, and the patient put to bed. At the end of three days, during which he suffered neither pain nor constitutional disturbance, the catheter was removed and the patient allowed to walk about. For a period of three days more, he could pass his water in a large stream and without pain, and then, in the course of one night, the improvement effected by the operation vanished, and his old difficulty returned in full force. The strictures were probably resilient in character, had merely stretched before the instruments, and had again contracted after the immediate effects of the operation had passed away. After a few days, no change for the better being experienced, the patient was again put under an anæsthetic and the operation repeated. This time, however, the largest cylinder was passed frequently and suddenly through the strictures until they were felt to yield decidedly to the instrument. The patient was treated as before, and had no return of the difficulty. Catheters were afterwards passed at intervals as long as the patient, who believed himself cured, would submit to it. He is up to this time well.

In this operation I was assisted by the staff of the hospital, and was especially aided by Dr. Noyes, whose knowledge of the topography of the strictures, acquired in his repeated soundings, was of great service.

The second case is one which is still under treatment. I was called, on August 10th, in consultation with Drs. J. J. Mulheron and A. H. Smith, of this city, to a patient who was suffering from retention of urine, consequent upon a then impassable stricture. The history of the case, as given by the patient, a married man 30 years of age, was as follows: A gonorrhœa, received several years ago, was followed by difficulty in passing water. This trouble increased gradually, was aggravated by sexual intercourse, spirituous drinks and sensual indulgence of any kind. Obliged to seek surgical advice, he finally consulted a practitioner of the city, who attempted to pass bougies through the urethra into the bladder. Every effort was unsuccessful, a stricture about three inches from the orifice of the urethra proving impassable to the smallest instruments. Repeated trials, on different days, had like result, the patient in the meantime passing his water in a very fine stream, and at times only in drops. On the last trial, which occurred about the end of September, the surgeon became impatient according to the account of the patient, and forcibly thrust a catheter through the stricture, still failing, however to reach the bladder. This operation caused the patient great pain and left him in a worse condition than he was before. He then consulted an irregular practitioner, who tried, also without success, to pass a catheter through the obstruction.

On August 10th Drs. Smith and Mulheron were called upon to take charge of the case, and found the patient in a truly deplorable condition. The penis was enormously swollen and œdematous; the bladder was distended, and formed a large tumor in the lower part of the abdomen. Oppressed constantly with the desire to urinate, he would strain with great force, and finally expel only a few drops of urine from the urethra.

I was then called in consultation, and we proceeded to make as careful an examination as the condition of the patient would allow. A stricture was discovered in the position above indicated, surrounded by false passages. The sounds would slip into pockets in different directions around the urethra with the greatest ease, but the passage through the stricture could not be discovered with our finest instruments. We deemed it best to refrain from much manipulation, and ordered the patient a hot hip bath and morphia enough, in small doses frequently repeated, to produce sleep.

Under this treatment the bladder was enabled to discharge its contents during the course of the night, and the patient, who, on the previous evening, could scarcely expel his urine in drops, was now able to pass it in a fine stream. There was a brawny condiion of the penis and the lower part of the scrotum, and a crackling sensation under the finger, which indicated, to my mind, urinary infiltration. Incisions were accordingly made, which gave free exit to a quantity of mingled pus and urine. Through these incisions the patient, at every attempt at micturition, passed a quantity of urine. Hot fomentations were applied, he was kept for a few days under the influence of morphia, and on August 16th the swelling and inflammation had so far subsided as to make an operation for the relief of the stricture justifiable. Accordingly, with the assistance of Drs. Smith and Mulheron, I proceeded to perform the operation of external urethrotomy.

It was found impossible, with a moderate degree of persistency, to pass even the smallest bougie into the bladder. Passing a large sized catheter down to the seat of the obstruction, I cut down upon it and opened the urethra above the stricture. It was still impossible to get a guide through the nearly obliterated canal, and I was forced to carry my incisions in the direction of the normal urethra until I could penetrate it beyond. This was done without very much difficulty, and passing a catheter from my incision below the stricture upwards, I was enabled to judge of its precise extent and character. It was of half an inch in length and occupying nearly the whole calibre of the urethra. When cut through, it presented the appearance of indurated tissue. A catheter was fastened in the bladder and the patient put to bed.

Under the care of Dr. Mulheron, the patient rapidly improved, and is now nearly well, though the urine still flows through a small orifice yet unhealed. A catheter is passed every other day, and the patient is warned of the possibility of recontraction at the seat of the stricture and of the necessity of keeping the canal patent.

On comparing the relative value of these two modes of procedure, one can not fail to remark the possibility of urinary fistula resulting from external urethrotomy. I have never yet had a case of my own in which such fistulæ became permanent. In the case just related, however, such an event could hardly detract from the worth of the operation, as the patient, suffering from urinary infiltration, was in a fair way, if unaided, to acquire numerous sinuses and fistulous openings. Where Holt's method of sudden dilatation is possible, it would seem to me the preferable mode of dealing with these cases. Where the urethra is so nearly closed as to make the introduction of a catheter, after reasonable trial, impossible, I do not hesitate to open it by external incision.

REPORT UPON FOUR CASES OF ANGULAR CURVATURE OF THE SPINE. (Pott's Disease.)

Read before the Wayne County Medical Society, September 7, 1870, by H. F. Lyster, M. D.

No ONE has described the peculiar symptoms of this affection so well as has Percival Pott, the distinguished surgeon of St. Bartholomew's (1744–1788). Nor has any one since his times given with a greater discrimination or more general accuracy, the history of the results of these cases. To him is due the credit of having distinguished angular curvature from lateral curvatures from muscular debility and insufficiency, and from habit, as well as from those depending upon rachitis, and for calling the attention of the profession to its then understood pathology and treatment.

The plan of treatment recommended by him, viz: rest in a horizontal positon, is perfectly correct, and can only be dispensed with when apparatus equally serves to procure rest in any position of the body. The confinement to the bed for many months is insisted upon by our most renowned surgical authorities at the present time, and it is superior to any mechanical apparatus, unless of the most recent and scientific design. The views entertained at that period regarding the essential origin of diseases of like character, the theory of their tubercular origin, are not now so generally received by pathologists, and indeed may be said to have been almost completely overturned within the past ten years.

This disease is at the present date generally classed, and we believe very properly, with the surgical diseases of childhood, and with the list of chronic inflammations of the joints, as the knee, hip and elbow.

Cases, it is true, occur at other periods of life, but they are quite exceptional. Percival Pott never saw a case over forty. Sir Benjamin Brodie mentions only one over forty-five. The opinion of Percival Pott, that angular curvature usually occurs in weak and delicate children, has been proved correct by all observation since his time, and this characteristic is equally applicable to the majority of patients the subjects of any of the chronic inflammations of the joints, and in adult cases some dyscrasy is usually present. We find, however, though less frequently, the same chronic inflammation occurring in children of healthy parentage and themselves of apparently robust constitution, and from this fact conclude that the disease is not of tuberculous origin; and although it, as well as morbus coxarius, chronic synovitis of knee or elbow, may be found more frequently among children suffering from mal-nutrition and improper assimilation of food, it is in many, if not in most cases, the result of injury.

The constitutional cacexia of the recipient of the injury may determine the inflammation of the spinal inter-vertebral fibro-cartilage, where, in its absence, a simple sprain would be the result. In other cases the injury would be sufficient to induce the inflammation irrespective of the constitutional conditions. In other words, any dyscrasy affords an inviting field for inflammatory action. The fact which has been recently pretty well established that the inflammations of the joints usually begin in the soft parts, most frequently in the synovial membrane, has led to the observation that in angular curvature the inflammation very generally affects first the fibro-cartilaginous portion of the column. Here, as in hip joint disease, only when the origin is from tubercle does the disease begin in the cancellated structure of the bone. The favorable result of treatment resorted to in accordance with these pathological teachings will prove to the most skeptical the truth of these positions.

Fifteen years ago, in the hands of the best surgeons, these cases were considered hopeless, so far as overcoming deformity or curing the disease, and nature was trusted alone to save such as she would. Now, no one up with the surgical teachings of his day but feels the utmost confidence in being able to save those not affected by tubercular infiltration, and that without deformity.

Dr. C. F. Taylor, of New York, writing to me under date of

December 6th, 1869, says: "In my opinion, those cases in the cervical region, which have hitherto been considered the most serious, are the most readily cured. I mean not *palliation*, but *cure*, is best, easiest and most speedily obtained in the cervical region. With perfect protection to the diseased vertebræ, reparation is accomplished in half the time it takes in any other portion of the spinal column, and deformity may be absolutely prevented, and generally removed if formed." In this letter he refers particularly to cases in the cervical region, but the general assertion of a complete cure being possible in all portions of the spinal column is conveyed by him, who is one of our best American orthopædic surgeons.

This disease, it is presumable, differs in its history from the other joint inflammations only by reason of its location and the physical phenomena thus determined. We have a similarity of results from the inflammation in all; we may have effusion of organizable lymph with resolution, or we may have caries, necrosis, and an abscess, which may or may not open externally or internally, with the discharge of bone, and pus containing, also, the elements of bone in solution.

The value of the vertebral column, supporting, as it does, the head and upper extremities, together with the chest and the vital organs contained in it, and also most of the viscera of the abdomen, as well as supporting and protecting in its interior the extremely delicate tissues of the spinal cord, need not be more than simply referred to in this connection to illustrate the importance of any inflammation affecting its integrity. The breaking down of any of the bodies of the vertebræ, or even the more or less complete absorption of one or more of the inter-vertebral fibro-cartilages, by the softening and dissolving processes of inflammatory action, would be similar to the removal of wedge-shaped sections in the trunk of a tree, allowing it to bend at the partial section until its surfaces rested again together.

When this disease is in the cervical region the head sinks, resting the chin upon the sternum, with usually a greater or less lateral inclination. In the dorsal region, the head, upper extremities and the chest are lowered and the breast becomes pigeon-shaped, with a well marked hump in the dorsal region. The ribs act as splints and relieve the pressure upon the bodies of the vertebræ, and the disease is thus frequently terminated with marked and permanent deformity. In the lumbar region, the deformity is not so marked, though the result may be quite as serious and more difficult to cure. The most frequent locations of this inflammation are in those portions of the spine which receive the maximum of force in any transmission of it through the column. Those points are the dorso-lumbar and cervico-dorsal regions.

We will not extend our remarks upon the etiology or pathology of vertebral inflammation, but proceed at once to the diagnosis and treatment. Among the earlier signs, and long before any marked deformity is observable, is pain. The surgeon who expects to find this symptom produced by feeling and percussing the spines of the vertebræ, will very constantly be mistaken, and if he depends upon finding a tender point, will rarely discover this disease before deformity has proved its certain presence. Still, pain is frequently a symptom, but it is generally in the hypogastric or umbilical region, and is, consequently, referred to abnormal derangement. Dr. Benj. Lee, of Philadelphia (contrib. to the Path., Diag. and Treat. of Angular Curvat. of Spine), believes this to be from spasm of muscular fibres of the stomach and intestines from reflex action. It is very frequently mistaken, both by the physician and the family, for pain in the bowels from flatus.

This pain is paroxysmal, coming on during exercise, particularly when a sudden, unguarded movement is made, and lasts for a variable time. The patient, to guard against this, contracts almost constantly the fixing muscles of the vertebral column, and in consequence, when the disease has at all advanced, presents the awkward and stiff appearance peculiar to this affection. The easy and graceful movements of childhood are entirely wanting. . When the little patient wishes to pick up an article upon the floor, he does not stoop for it, as this would crowd together the vertebral bodies, but he bends the knees and reaches the arm, holding it parallel with the axis of the trunk. There is, in consequence of this constraint, a peculiar gait in which there is no spring, but a sliding movement with elevated chin (unless the disease is in the cervical vertebræ), and shoulders well held back. The patient steadies himself or herself, as the case may be, by leaning upon firm objects which will steadily maintain the weight. As the disease advances, symptoms of irritability of mind and body will become apparent, in many cases with irritations from reflex action upon important organs, determined by the location of the disease.

Paralysis of the lower extremities, with loss of power over the bladder and rectum, is one of the most important consequences of this inflammation when it extends to the spinal cord. Derangements of the functions of respiration and deglutition mark the advanced stages of dorsal and cervical vertebral inflammation. The cases which are most amenable to treatment are those which are taken in the earlier stages, and, if possible, before abscesses have formed. The principle of the treatment can be expressed in two words, viz: relieve pressure. Other important measures must be used, but are entirely secondary to this most important one. Among these will be hygienic and therapeutical means, which no good surgeon ever loses sight of, and which are, thanks to a better understanding of the pathology of this disease, and the almost, if not quite, perfect adaptation of apparatus much more readily used than was formerly the case, as, for instance, in the times of Pott, Brodie and Boynton. The invention of a splint convenient for any region of the column, which throws the weight of all that portion of the frame above the disease upon the transverse processes and spines of the vertebræ, and thus relieves the pressure upon the bodies and allows of cure by natural processes, has recently been made. We need no longer the issues and cauteries in vogue among the cotemporaries of Pott (he himself deserves the lasting gratitude of the profession and public for opposing them as earnestly as he did), or even at La Charitie, with Nelaton, fifteen years ago. The patient is now enabled to breathe the fresh, invigorating air of the country or seaside, if in summer, or in winter has healthful out-of-door walks and drives. To American and English surgeons are we chiefly indebted for this advancement in the treatment of chronic inflammations of the joints; and to Dr. C. F. Taylor, of New York, are we under particular obligation for the correct principles of applying mechanical apparatus in this disease, as well as for the instrument itself, to accomplish the result wished for.

I will here mention four cases of this disease which have come under my treatment within the past eighteen months. It is too soon to expect a complete report and a discharge of the cases; indeed, one of them I have not treated six months, and that time does not represent more than one-quarter of the period which I would expect to keep them under observation.

Case I.—*December 6, 1868.* J. O., male, aged 15 months; Washtenaw County; delicate, strumous appearance; curvature at junction of dorsal and lumbar region; has never crept; lives in a basement; seemed to possess but little power of motion over lower extremities; can not lie in prone position; Dr. Taylor's splint applied January 8, 1869.

July 11, 1870. Dr. Wm. F. Breakey, of Ann Arbor, reports child well nourished; no lateral curvature. "The mother reports the child's back as straight and well, but weak; he can turn over and sit up when placed prone or supine; he creeps quite rapidly across the floor; he moves as rapidly as other children; does not wear the splint at night now, and it has been left off a portion of the day several times; the back remains quite straight for some time, but the splint is missed after a time, and he can not sit up when left off too long; the lower limbs are weak, and as yet the little patient makes no effort to stand. The appetite and general health are pretty good. There is a marked improvement over his former condition. Showering the back at first with tepid and subsequently with cool water, with the constant application of the splint, has been advised by medical counsel."

Case II.—*February 23, 1869.* I. H., female, aged 4 years; Jackson County. The disase had existed for a year. It was in the central dorsal region, and there was complete paralysis of the lower extremities. The little girl was unable to sit up or lift her head, and was carried upon a pillow.

March 10, 1870. The splint had been applied for one week at the above date, and improvement was noticed immediately; she could sit up and move her lower extremities. Since the above date I have heard nothing regarding her.

Case III.—*December 6, 1869.* F. H., female, aged 4 years; Wayne Co. General appearance, healthy; parents not in robust health, though of active habits; there was a decided tendency to pulmonary disease on. the mother's side; she fell down stairs in October, 1869, doubling the head upon the chest. To all appearance she was uninjured. In the course of a few weeks she began to rest the chin upon the sternum; no tenderness could be discovered nor was there any complaint of pain. Dr. R. Inglis was called in consultation and a plan of treatment was agreed upon, which has not since been changed. The actual cautery was applied upon the left, and about two inches from, the second dorsal vertebra*. We were of the opinion that the fifth and sixth cervical vertebræ and inter-vertebral fibro-cartilages were the seat of the disease. The patient was placed upon a hard mattrass, made for the occasion, without a pillow, and remained upon it for one month, while the splint was being manufactured. One of Dr. Taylor's splints was applied in January, 1870. The levers for throwing back the weight of the head upon the transverse and spinous processes were, in this instrument, upon a level with the lower cervical vertebræ; an odontoid process and an atlas were so arranged as to permit of the natural lateral movement of the neck. This instrument has been worn night and day for eight months, with the greatest benefit. She can dispense with it for five or six hours and maintain her head erect, but then becomes tired and needs it. She will probably be able to dispense with the instrument in eight or ten months. No abscess has ever formed in this case. A perfect cure, without deformity, is prognosticated.

November 4th, 1870.—She can dispense, at this date, with the instrument for the greater part of the day, when occasionally permitted to do so.

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* This was done to assist in arresting the disease until a proper splint could be manufactured. Under like circumstances I would not again use it.

Case IV.—*April, 1870.* L. M., female, aged 4 years; Wayne County. In July, 1868, she had a fall upon her back on the floor. This was accompanied by convulsions; the eyes remained crossed for two or three weeks. It was about three months after the injury that the head began to be bent forward and steadied by the chin resting upon the chest.

I was invited by the family physician, Dr. R. Inglis, to take charge of this patient in April, 1870. The child, at this period, was well nourished, and did not suffer from any pain, excepting when receiving a sudden shock. When walking about she steadied her head by holding her hand against her face. She complained of pain when falling or when receiving a sudden jar. An abscess was pointing behind the sterno-mastoid muscle upon the left side of the neck. Her head was also tilted toward that side as well as forward.* The deformity was well marked. The abscess was at once opened and discharged a large quantity of laudable pus. The opinion was then given that a sinus connected with the vertebræ, which, by the subsequent discharge of one or two small pieces of bone, has been proved to have been correct. Dr. Taylor's splint was applied during the month, and she has worn it ever since, day and night, without any inconvenience; on the other hand, with the greatest relief and comfort. The deformity is almost entirely removed already, and the head is held in its proper position. She can now hold up her head for a short time without the brace, though this is not advised. The discharge from the sinus is trifling. A very favorable prognosis has been given, as regards the general result, as well as the restoration of contour.

Small-pox in Russia.—In Russia vaccination is not compulsory. According to official returns, 10,350,000 persons have died of small-pox in that country during the last seventy years. What say our friends of the Anti-vaccination League to this?

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* Photographs of the last two cases were exhibited.

Selections.

ON THE RELATIONS BETWEEN BODY AND MIND.

By Henry Maudsley, M. D., F. R. C. P.

Lecture II—Part II.

I purposely selected for consideration the defective brain of the idiot, because it exhibits an undeniable fault of structure, which is often plainly traceable to evil ancestral influences. When we duly consider this, and reflect that we might, if we chose, arrange a series of human brains which should present a regular gradation from the brain of an ape to that of a well developed European, are we not fully justified in supposing that like unfavorable ancestral influences may occasion defects in the constitution or composition of the mind-centres which we are yet quite unable to detect? We know nothing of the occult molecular movements which are the physical conditions of our mental operations. We know little or nothing of the chemical changes which accompany them —cannot, in fact, detect the difference between the nerve element of a brain exhausted by exercise and incapable of further function, and that of a brain reinvigorated by sleep and ready for a day of energetic function; and we know nothing of the intricate connection of nerve cells in the hemispheres. It is plain, then, that there may be, unknown to us save as guessed from their effects, the most important modifications in the molecular activities of nerve element, changes in its chemical composition, and actual defects in the physical constitution of the nerve centres. Wherefore, when no appreciable defect is found in the brain of one whoh as had a strong predisposition to insanity, and has ultimately died insane, it behooves us to forbear a hasty conclusion that it is a perfectly well constituted brain. Close to us, yet inaccessible to our senses, there lies a domain of nature—that of the infinitely little—the operations in which are as much beyond our present ken as are those that take place in the remotest regions of space, to which the eye, with all its aids, cannot yet reach, and of which the mind cannot conceive.

It certainly cannot be disputed that when nothing abnormal whatever might be discoverable in the brains of persons who have a strong hereditary tendency to insanity, they often exhibit characteristic peculiarities in their manner of thought, feeling and conduct, carrying in their physiognomy, bodily habit and mental disposition the sure marks of their evil heritage. These marks are, I believe, the outward and visible signs of an inward and invisible peculiarity of cerebral organization. Here, indeed, we broach a most important inquiry, which has only lately attracted attention—the inquiry, namely, into the physical and mental signs of the degeneracy of the human kind. I do not mean to assert that all persons whose parents or blood relatives have suffered from nervous or mental disease exhibit mental and bodily peculiarities; some may be well formed bodily, and of superior natural intelligence, the hereditary disposition in them not having assumed the character of deterioration of race; but it admits of no dispute that there is what may be called an *insane temperament or neurosis*, and that it is marked by peculiarities of mental and bodily conformation. Morel, who was the first to indicate, and has done much to prosecute, this line of inquiry, looks upon an individual so constituted as containing in himself the germs of a morbid variety. Summing up the pathological elements which have been manifested by his ancestors, he represents the first term of a series which, if nothing happen to check the transmission of degenerate elements from generation to generation, ends in the extreme degeneracy of idiocy, and in extinction of the family.

What are the bodily and mental marks of the insane temperament? That there are such is most certain, for although the variety of this temperament cannot yet be described with any precision, no one who accustoms himself to observe closely will fail to be able to say positively, in many instances, whether an insane person, and even a sane person in some instances, comes of an insane family or not. An irregular and unsymmetrical conformation of the head, a want of regularity and harmony of the features, and, as Morel holds, malformations of the external ear, are sometimes observed. Convulsions are apt to occur in early life, and there are tics, grimaces, or other spasmodic movements of muscles of face, eyelids or lips afterwards. Stammering and defects of pronunciation are also sometimes signs of the neurosis. In some cases there are peculiarities of the eyes, which, though they may be full and prominent, have a vacillating movement, and a vacantly-abstracted or half-fearful, half-suspicious and distrustful look. There may, indeed, be something in the eye wonderfully suggestive of the look of an animal. The walk and manner are uncertain, and, though not easily described in words, may be distinctly peculiar. With these bodily traits are associated peculiarities of thought, feeling and conduct. Without being insane, a person who has the insane neurosis strongly marked is thought to be strange, queer and not like other persons. He is apt to see things under novel aspects, or to think about them under novel relations, which would not have occurred to an ordinary mortal. Punning on words is, I am inclined to think, sometimes an indication of the temperament, and so also that higher kind of wit which startles us with the use of an idea in a double sense, of both which aptitudes no better example can be given than that of Charles Lamb. His case, too, may show that the insane temperament is compatible with, and indeed it not seldom co-exists with, considerable genius. Even those who have it in a more marked form often exhibit remarkable special talents and aptitudes, such as an extraordinary talent for music or for calculation, or a prodigious memory for details when they may be little better than imbecile in other things. There is, indeed, a marked instinctive character in all they think and do: they seem not to need or to be able to reflect upon their own mental states. At one time unduly elated, at another time depressed without apparent cause, they are prone to do things differently from the rest of the world; and now and then they do whimsical and seemingly quite purposeless acts, especially under conditions of excitement, when the impulses springing out of the unconscious morbid nature surprise and overpower them. Indeed, the mental balance may be easily upset altogether by any great moral shock, or by the strain of continued anxiety. A great physical change in the system, too, such as is caused by the development of puberty, by the puerperal state, and the climacteric change, is not without danger to their mental stability. The effects of alcohol on such persons are in some respects special: it does not make them so much drunk as mad for the time being; and I think it will be found in most, if not all, cases of insanity caused by alcohol that there has been a predisposition to it.

I have sketched generally the features of the insane temperament, but there are really several varieties of it which need to be observed and described. In practice we meet with individuals representing every gradation from the mildest form of the insane temperament down to actual idiocy. These cases ought to be arranged in groups according to their affinities, for until this be done we shall not make much real progress toward exact scientific notions respecting the causation and pathology of insanity. One group might consist of those egotistic beings, having the insane neurosis, who manifest a peculiar morbid suspicion of everything and everybody; they detect an interested or malicious motive in the most innocent actions of others, always looking out for an evil interpretation; and even events they regard as in a sort of conspiracy against them. Incapable of altruistic reflection and true sympathies, they live a life of solitude and self-brooding, entrenched within their morbid self-feeling, until the discord between them and the world is so great that there is nothing for it but to count them mad. Another group might be made of those persons of unsound mental temperament who are born with an entire absence of the moral sense, destitute of the possibility even of moral feeling; they are as truly insensible to the moral relations of life—as deficient in this regard as a person color-blind is to certain colors, or as one who is without ear for music is to the finest harmonies of sound. Although there is usually conjoined with this absence of moral sensibility more or less weakness of mind, it does happen in some instances that there is a remarkably acute intellect of the cunning type.

The observations of intelligent prison surgeons are tending more and more to prove that a considerable proportion of criminals are weak-minded or epileptic, or come of families in which insanity, epilepsy or some other neurosis exists. Mr. Thompson, Surgeon to the General Prison of Scotland, has gone so far recently as to express his conviction that the principal business of prison surgeons must always be with mental defects or diseases; that the diseases and causes of death among prisoners are chiefly of the nervous system; and, in fine, that the treatment of crime is a branch of psychology. He holds that there is among criminals a distinct and incurable criminal class, marked by peculiar low physical and mental characteristics; that crime is hereditary in the families of criminals belonging to this class, and that this hereditary crime is a disorder of mind, having close relations of nature and descent to epilepsy, dipsomania, insanity and other forms of degeneracy. Such criminals are really morbid varieties, and exhibit often marks of physical degeneration—spinal deformities, stammering, imperfect organs of speech, club foot, cleft palate, hare lip, deafness, paralysis, epilepsy and scrofula. Moreau relates a striking case, which is of interest as indicating the alliance between morbid or degenerate varieties.

Mrs. D——, aged thirty-two. Her grandfather kept an inn at the time of the great French Revolution, and during the Reign of Terror he had profited by the critical situation in which many nobles of the department found themselves, to get them secretly into his house, where he was believed to have robbed and murdered them. His daughter, who was in his secrets, having quarreled with him, denounced him to the authorities, but he escaped conviction from want of proofs. She subsequently committed suicide. One of her brothers had nearly murdered her with a knife on one occasion, and another brother hung himself. Her sister was epileptic, imbecile and paroxysmally violent. Her daughter, the patient, after swimming in the head, noises in the ears, flashes before the eyes, became deranged, fancying that people were plotting against her, purchasing arms and barricading herself in her room, and was finally put in an asylum. Thus there were, in different members of this family, crime, melancholia, suicide, epilepsy and mania. Need we wonder at it? The moral element is an essential part of a complete and sound character; he who is destitute of it, being unquestionably to that extent a defective being, is therefore on the road to or marks race degeneracy; and it is not a matter of much wonder that his children should, when better influences do not intervene to check the morbid tendency, exhibit a further degree of degeneracy, and be actual morbid varieties. I think that no one who has studied the causation of insanity will question this mode of production.

I could not, if I would, in the present state of knowledge, describe accurately all the characteristics of the insane neurosis, and group according to their affinities the cases testifying to its influence. The chief concern now with its morbid peculiarities is to point out, first, that they mark some inherited fault of brain organization; and, secondly, that the cause of such fault is not insanity alone in the parent, but may be other nervous disease, such as hysteria, epilepsy, alcoholism, paralysis, and neuralgia of all kinds. Except in the case of suicidal insanity, it is not usual for the parent to transmit to the child the particular form of mental derangement from which he has suffered. Insanity in the parent may be epilepsy in the child, and epilepsy in the parent insanity in the child; and in families where a strong tendency to insanity exists, one member may be insane, another epileptic, a third may suffer from severe neuralgia, and a fourth may commit suicide. The morbid conditions which affect the motor nerve-centers in one generation seem to concentrate themselves sometimes upon the sensory or the ideational centers in another. In truth, nervous disease is a veritable Proteus, disappearing in one form to reappear in another, and, it may be, capriciously skipping one generation to fasten upon the next.

The different forms of insanity that occur in young children—as all forms of it except general paralysis may do—are almost always traceable to nervous disease in the preceding generation, a neuropathic condition being really the essential element in their causation. The cases of acute mania in children of a few weeks or a few years old which have been described, might more properly be classed as examples of idiocy with excitement. There can be no true mania until there is some mind; but we do meet sometimes in older children with a genuine acute mania, occurring usually in connection with chorea or epilepsy, and presenting the symptoms, if I may so express it, of a mental chorea or an epilepsy of the mind, but without the spasmodic and convulsive movements of these diseases. More or less dullness of intelligence and apathy of movement, giving the seeming of a degree of imbecility, is common enough in chorea, and in some cases there is violent delirium; but, besides these cases, there are others in which, without choreic disorder of movements, there is a choreic mania; it is an active delirium of ideas which is the counterpart of the usual delirium of movements, and its automatic character and its marked incoherence are striking enough to an ordinary observer. Hallucinations of the special senses, and loss or perversion of general sensibility, usually accompany the delirium, the disorder affecting the centres of special and general sensation, as well as the mind centres.

Between this choreic mania and epileptic mania there are intermediate conditions partaking more or less of the character of one or the other—hybrid forms of a cataleptic nature. The child will lie for hours or days in a seeming ecstasy or trance, with its limbs rigid or fixed in a strange posture. There may be apparent insensibility to impressions, while at other times vague answers are given, or there is a sudden bursting out into wild shrieks or incoherent raving. If this be of a religious kind, the child is apt to be thought by ignorant persons to be inspired. The attacks are of variable duration, and are repeated at varying intervals. On the one hand, they pass into attacks of chorea, and, on the other hand, into true epileptic seizures, or alternate with them.

In children, as in adults, a brief attack of violent mania—a genuine *mania transitoria*—may precede or follow or take the place of an epileptic fit, in the latter case being a masked epilepsy. Children of three or four years of age are sometimes seized with attacks of violent shrieking, desperate stubbornness, of furious rage, when they bite, tear, kick, and do all the destruction they can. These seizures, which are a sort of vicarious epilepsy, come on periodically, and may either pass in the course of a few months into regular epilepsy, or may alternate with it. Older children have perpetrated crimes of a savage and determined nature—incendiarism, and even murder—under the influence of similar attacks of transitory fury, followed or not by epileptic convulsions. It is of the utmost importance to realize the deep effect which the epileptic neurosis may have on the moral character, and to keep in mind the possibility of its existence when a savage, apparently motiveless and unaccountable crime has been committed. A single epileptic seizure has been known to change entirely the moral character, rendering a child rude, vicious and perverse who was hitherto gentle, amiable and tractable. No one who has seen it can fail to have been struck with the great and abrupt change in moral character which takes place in the asylum epileptic immediately before the recurrence of his fits. In the intervals between them he is often an amiable, obliging and industrious being, but when they impend he becomes sullen, morose and most dangerous to meddle with. Not an attendant but can then foretell that he is going to have his fits, as confidently almost as he can foretell that the sun will rise next day. Morel has made the interesting observation, which is certainly well founded, that the epileptic neurosis may exist for a considerable period in an undeveloped or masked form, showing itself, not by convulsions, but by periodic attacks of mania, or by manifestations of extreme moral perversion, which are apt to be thought willful viciousness. But they are not: no moral influence will touch them; they depend upon a morbid physical condition, which can only have a physical cure, and they get their explanation, and indeed justification, afterward, when actual epilepsy occurs.

The epileptic neurosis is certainly most closely allied to the insane neurosis, and when it exists in its masked form, affecting the mind for some time before convulsions occur, it is hardly possible to distinguish it from one form of the insane neurosis. The difficulty of doing so is made greater inasmuch as epilepsy in the parent may engender the insane neurosis in the child, and insanity in the parent the epileptic neurosis in the child. A character which the insane neurosis has in common with the epileptic neurosis is, that it is apt to burst out in a convulsive explosion of violence; that when it develops into actual insanity it displays itself in deeds rather than in words—in an insanity of action rather than of thought. It is truly a *neurosis spasmodica*. Take, for example, a case which is one of a class, that of the late Alton murderer, who, taking a walk one fine afternoon, met some little girls at play, enticed one of them into a neighboring hop garden, there murdered her and cut her body into fragments, which he scattered about, returned quietly home, openly washing his hands in the river on the way, made an entry in his diary, "Killed a little girl; it was fine and hot;" and when forthwith taken into custody, confessed what he had done, and could give no reason for doing it. At the trial it was proved that his father had had an attack of acute mania, and that another near relative was in confinement, suffering from homicidal mania. He himself had been noted as peculiar. He had been subject to fits of depression, been prone to weep without apparent reason, and had exhibited singular caprices of conduct, and it had once been necessary to watch him from fear that he might commit suicide. He was not insane in the legal or in the ordinary sense of the term, but he certainly had the insane neurosis, and it may be presumed confidently that he would, had he lived, have become insane.

Those who have practical experience of insanity know well that there is a most distressing form of the disease, in which a desperate impulse to commit suicide or homicide overpowers and takes prisoner the reason. The terrible impulse is deplored sometimes by him who suffers from it as deeply as by any one who witnesses it. It causes him unspeakable distress; he is fully conscious of its nature, and struggles in vain against it; his reason is no further affected than in having lost power to control or having become the slave of the morbid and convulsive impulse. It may be that this form of derangement does sometimes occur where there is no hereditary predisposition to insanity, but there can be no doubt that in the great majority of cases of the kind there is such a neuropathic state. The impulse is truly a convulsive idea, springing from a morbid condition of nerve element, and it is strictly comparable with an epileptic convulsion. How grossly unjust, then, the judicial criterion of responsibility which dooms an insane person of this class to death if he knew what he was doing when he committed a murder! It were as unreasonable to hang a man for not stopping by an act of will a convulsion of which he was conscious. An interesting circumstance in connection with this morbid impulse is that its convulsive activity is sometimes preceded by a feeling very like the *aura epileptica*—a strange morbid sensation, beginning in some part of the body, and rising gradually to the brain. The patient may accordingly give warning of the impending attack in some instances, and in one case was calmed by having his thumbs loosely tied together with a ribbon when the forewarning occurred. Dr. Skae records an instructive example in one of his annual reports. The feeling began at the toes, rose gradually to the chest, producing a sense of faintness and constriction, and then to the head, producing a momentary loss of consciousness. This aura was accompanied by an involuntary jerking—first of the legs, and then of the arms. It was when these attacks came on that the patient felt impelled to commit some act of violence to others or to himself. On one occasion he attempted to commit suicide by throwing himself into the water; more often the impulse was to attack others. He deplored his condition, of which he spoke with great intelligence, giving all the details of his past history and feelings. In other cases a feeling of vertigo, a trembling, and a vague dread of something fearful being about to happen, resembling the vertigo and momentery vague despair of one variety of the epileptic aura, precede the attack. Indeed, whenever a murder has been committed suddenly, without premeditation, without malice, without motive, openly, and in a way quite different from the way in which murders are commonly done, we ought to look carefully for evidence of previous epilepsy, and should there have been no epileptic fits, for evidence of an *aura epileptica* and other symptoms allied to epilepsy.

It is worth while observing that in other forms of insanity, when wo look closely into the symptoms, there are not unfrequently complaints of strange, painful and distressing sensations in some part of the body, which appear to have a relation to the mental derangement not unlike that which the epileptic aura has to the epileptic fit. Common enough is a distressing sensation about the epigastrium: it is not a definite pain, is not comparable strictly to a burning or weight, or to any known sensation, but is an indescribable feeling of distress to which the mental troubles are referred. It sometimes rises to a pitch of anguish, when it abolishes the power to think, destroys the feeling of identity and causes such unspeakable suffering and despair that suicide is attempted or effected. In other cases the distressing and indescribable sensation is in the crown of the head or down the spine, and sometimes it arises from the pelvic organs. In all cases the patients connect their mental trouble with it, regarding it as the cause of the painful confusion of thought, the utter inability of exertion, the distressing ideas, and the paroxysm of despair. Perhaps they exaggerate its importance; but there can be little doubt that writers on mental disorders, too exclusively occupied with the prominent mental features, have not hitherto given sufficient attention to these anomalous sensations. We have been apt to class them as hypochondriacal, and to pass them over as of no special significance; but I cannot help thinking that, properly studied, they may sometimes teach us more of the real nature of the particular form of insanity—of its probable course, termination, and its most suitable treatment—than many much more obtrusive symptoms.

In bringing this lecture to an end, I may fitly point out how entirely thus far the observation of the phenomena of defective and disordered mind proves their essential dependence on defective and disordered brain, and how closely they are related to some other disordered nervous functions. The insane neurosis which the child inherits in consequence of its parent's insanity is as surely a defect of physical nature as is the epileptic neurosis, to which it is so closely allied. It is an indisputable though extreme fact that certain human beings are born with such a native deficiency of mind that all the training and education in the world will not raise them to the height of brutes; and I believe it to be not less true that, in consequence of evil ancestral influences, individuals are born with such a flaw or warp of nature that all the care in the world will not prevent them from being vicious or criminal, or becoming insane. Education, it is true, may do much, and the circumstances of life may do much; but we cannot forget that the foundations on which the acquisitions of education must rest are not acquired, but inherited. No one can escape the tyranny of his organization; no one can elude the destiny that is innate in him, and which unconsciously and irresistibly shapes his ends, even when he believes that he is determining them with consummate foresight and skill. A well grounded and comprehensive theory of mind must recognize and embrace these facts; they meet us every moment of our lives, and cannot be ignored if we are in earnest in our attempts to construct a mental science; and it is because metaphysical mental philosophy has taken no notice whatever of them, because it is bound by the principle of its existence as a philosophy to ignore them, that, notwithstanding the labor bestowed on it, it has borne no fruits—that, as Bacon said of it, "not only what was asserted once is asserted still, but what were questions once are questions still, and instead of being resolved by discussion, are only fixed and fed." —*London Lancet.*

DR. N. G. ORDWAY, of Portland, Maine, who was sued for malpractice in the matter of an operation performed upon a patient's hand, has received a verdict in his favor on the singular defense, as reported by a local paper, "that the ether used in the operation affected the physician so that he was unconscious of what he did."—*Med. Gazette.*

CANTHARISM.

By Alex. McBride, M. D., of Berea, O.

Cantharism is a term which I have applied to an induced physiological condition not hitherto described. The condition thus termed is a peculiar and salutary one, which is established in the human economy by a few large doses (fozj. to fozv. repeated), or a long continuance of small doses (m.xx to m.xxx repeated), of Cantharides. Quinism, Ergotism and Iodism are terms of analogous derivation, but they each express a pathological or non-salutary condition, resulting from over-dose ot idiosyncrasy. I do not know whether my term, as an expression of a fact, or the fact itself, has a precise analogue unless it be true, as I have heard stated, that men who work in the woods and fields, where the rhus toxicodendron abounds, sometimes chew a small portion of the leaves or bark of that shrub as a certain preventive of its poisonous action on the skin; it is also said that the vapor of alcoholic liquors cause intoxication of persons much exposed to them, unless a small quantity of the liquor is taken into the stomach.

My proposition is: that the taking of Cantharides into the stomach in considerable quantity, or for a length of time in small quantity, affects the system in such a manner, or produces such a state of physiological resistance, that the application of fly plaster, or other preparations of the fly to the skin, will not produce vesication. The state thus produced I have termed *Cantharism.*

Members of this society are aware that for several years I have recommended a much more extensive use of Cantharides than has been made; and I now assure them that my own practice has been consistent with my advice in the premises, and it has been in connection with such liberal use of this excellent remedy that I have observed the above fact.

I had not long followed my present method of administering Cantharides till I observed that fly plasters were very tardy in visicatory effect after the free use of the tincture internally. Blistering, for a general or revulsive effort, does not appear to me at all necessary in cases where the copious internal use of the remedy is practiced, but in the early days of my liberal use of the fly I frequently followed or accompanied it with blisters, and when early applied or conjointly with the first dose of the medicine they were operative to produce visication; but the general effect of a blister appears to me identical with that of an equivalent dose of the tincture of the fly. At a later stage, or after the system is fully under the effect of the medicine, no effect will be perceived from the application of a blister plaster distinguishable from that of the medicine internally, and the local effect will be exceedingly slight or null. It may be objected with fair plausibility that as the cases in which such quantities of this medicine were given were advanced cases, and almost moribund, the failure of the blister was owing to loss of susceptibility in the skin, to their action, from the advanced state of disease.

This certainly might be true of some cases at the commencement of this kind of treatment, but it could hardly be true two, three or four days afterward, when the patient had rallied, and the extremities and skin had assumed their natural warmth, color and sensibility. In those cases where vesication took place, more or less perfectly, the exudation was very slight and the surface soon healed. In some a slight redness was produced, and in others there was no perceptible effect; the amount of effect appearing to be inversely in proportion to the amount of the medicine that had been taken. I think blistering cannot be indicated under this treatment except for purely local considerations, and in that case it will probably be non-effective.

A case recently occurred which somewhat surprised me, notwithstanding my extensive observations. A young woman for many weeks had been able to take but little food—two or three of the smallest crackers and a cup or two of tea in the day, and some days less; she menstruated slightly, did not lose flesh extremely, kept up and did a little work. There was some of the time slight indications of mania. The pathological condition was not apparent, and being unable to retain in the stomach sufficient, either of food or medicine, such as the case seemed to require, and the circulation being very feeble, I prescribed Tr. Canth. in dose of six to ten drops, three times per day. The medicine seeming to have a good effect it was continued, with occasional intermissions for about two months. At about this time I directed the application of a fly plaster to relieve a pain in the side which she had for sometime complained of. Although the plaster was applied several times and kept on for long periods, it produced no local effect whatever; the plaster I know to be of good active quality, and she had a fine, delicate, good colored skin. Here was a clear instance of *cantharism* from the small dose long continued.

The dose in this case, I have no doubt, was as large and effective in proportion to the gastric capacity and general resistance of the patient as 20 or 25 drops would have been for ordinary patients. The entire amount taken was nearly an ounce; about as much as I have given in some extreme cases in one or two days. The patient got well without much other treatment.

The cases in which I have had most frequent opportunity to notice this effect of the medicine have been of very different kinds from the one described. They were mostly cases in a dangerous extremity of disease; cases where death was imminent from congestion, engorgement, blood stasis or collapse; such as cases of typhoid pneumonia, congestion intermittent, congestive stage of continued and malarious fevers, cholera, choleroid and the like. In some of these cases the induction of the state of cantharism produces a very interesting effect. The congestion, flux or chill is usually arrested or checked by about two or three drachms of the medicine in one or two hours time. The change begins to be observable in usually 15 or 30 minutes; sometimes an hour or more is required; the exalted frequency of the pulse abates, its thready or gaseous and evanescent character assumes a definite form under the finger; the livid features assume their natural color, warmth returns to the extremities. the moist rattling of the lungs abates, fear and despair vanish and hope is restored. In an hour or more the dose is repeated to confirm the good impression and so on, in less dose, from time to time according to indication. Soon there will be copious evacuation of dark colored urine; there will be evidence of re-established capillary circulation in all the members and organs; there will be freedom from pain, dyspnœa, nausea; freedom from fear of death. The patient generally recovers, but of course not in cases where vital organs or tissues are already destroyed. The foregoing effects will often be witnessed in cases where recovery is hopeless or impossible, in consequence of the amount of disease or destruction of organs and tissues. In those cases life is prolonged sometimes for several hours and sometimes for days.

Such cases are sometimes more interesting, if possible, than those which recover. I have seen cases in which disease, having already nearly completed its work, seemed to be suddenly suspended; those functions not destroyed by disease were aroused to vigorous exertion, the last vestages of fuel were forced in to temporarally kindle the expiring spark of life, and thus the patient lived for hours and days, the taste and appetite partially restored so that food was takn with some gusto, tobacco chewed or smoked and wines and liquors taken with a relish, and the mind had a dreamy clearness; the urine was regularly voided but growing paler and less. A casual observer would think there was a hopeful improvement, but a close scrutinizer will see in his countenance the shadow in the coming event; life is prolonged merely because from the active state of the capillaries, no further congestion or efflux is admissible. This is cantharism in articulo mortis, or *suspension of death.*

The physiological state of cantharism, then, appears to be a state of universal tonicity of the capillaries; which implies an active state of the secretions generally, which implied condition is the fact according to my observation.

If any one who hears or reads this is desirous of witnessing these effects of cantharides, I hereby notify him that he will never see them unless he discards wholly the notions prevalent about their aphrodisiac effects, and also the fear of producing troublesome stranguary. It must be used with the freedom and fearlessness with which paregoric and nitrous ether are used. There is prevalent an unreasonable prejudice and an unaccountable misapprehension concerning the therapeutic, toxic and physiological effects of this drug. Of its aphrodisiac action I have met with no instance whatever during the sixteen years in which I have used it thus freely; neither have I met with one case of troublesome stranguary caused by it, though I have often known that symptom relieved by the same in a certain class of cases.

Priapism and its troublesome accompaniments are toxic effects resulting from over-dose—one-half to an ounce of the tincture—and do not belong to the category which I have denominated *Cantharism.*

The state of cantharism can be produced as perfectly by application of the fly-plaster as by internal use of the tincture, and for this effect vesication is not at all necessary. About 100 superficial inches of fly-plaster laid on the trunk of the body, retained an hour, then removed and the surface washed so as to prevent vesication, will produce as much general or revulsive effect as 1½ to 2 drachms of the tincture administered internally. This method I practiced in the army, in several instances, when I could not command the tincture.

Nearly all physicians seem to regard the fly-plaster as merely a counter-irritant, and suppose its revulsive effect results from counter-irritation. It will be seen by the foregoing that counter-irritation is the least part of its value. To further prove this let any one in a case of stasis or congestion apply a large epispastic and closely observe what follows. In about thirty minutes the pulse will improve, the features will be less livid, and the rattle in the chest, if it be congestion of the lungs, will begin to abate; remove, if you please, the plaster now, or half an hour later, wash the surface, and it will show no sign of irritation, although the effect aimed at is procured. Under the same circumstances give 1½ to 2 drachms of the tincture, and the same effects will follow in twenty minutes. In many cases the effect from either method will be much slower in manifestation. The promptness of action will depend on the condition of the skin in the one case, and upon the susceptibility of the stomach in the other.

With regard to strangury, it should be borne in mind that I have said it does not occur when the medicine is given on proper indication for its use—when the engorged or paralyzed condition of the capillaries call for its action; but when no such condition exists, that disagreeable symptom is liable to follow the use of about 1½ drachms. But this is not a serious difficulty, for a good opiate will in a short time allay it. Even this small trouble has occurred to me but few times, and is no more than many times follows a blister.

In view of the facts here set forth, together with the large amount of facts which I have elsewhere published, relative to the action of cantharides, it is hoped that intelligent physicians will no longer entertain groundless fears, but avail themselves of the vast benefits of this excellent remedy.—*Transactions of Ohio Med. Soc.*

REGENERATION OF BONE AFTER SUB-PERIOSTEAL RESECTION OF JOINTS.

M. **Ollier**, who presented the following cases to the Academy of Sciences not long since, is the author of a valuable and exhaustive work on resection of bones, with special reference to the sub-periosteal operation. He justly concludes that these *post-mortem* observations are confirmatory of the eligibility of his method of operating, and of his experimental deductions.

"The two patients whose autopsy permitted me to verify these propositions died, one eighteen months and the other a year after resection of the elbow; the first was nineteen years old, and the second forty-nine. In the younger subject, the reproduction of the bone about the joint was very complete and regular; not only was the articulation restored by the approximation of the bony surfaces, but there was also restitution of the processes—the condyles of the humerus and the olecranon.

"Eight months after the operation the patient was in good condition, both locally and in general. There remained only a small, fistulous opening, which occasionally gave exit to a little serous discharge. The movements of extension and flexion, of pronation and supination, were re-established, and were daily becoming more perfect. Phthisis manifested itself, unfortunately, and from that time to the end of his life the patient suffered greatly. The hip joint and the shoulder, up to that period perfectly well, were attacked with fungous tumors, and became carious; the elbow, which had been resected, underwent similar changes, and suppurated till the end of life.

"At the autopsy, the inferior extremity of the humerus was the part most regularly restored; viewed on its anterior aspect, it presented a triangular outline, its apex corresponding with the diaphysis of the bone, and its angles terminating in prominent projections, representing the epicondyle and epitrochlea; the base corresponded with the articular interline. A careful section of the bone demonstrated the repair of the condyles. Although the new portion appeared at first glance perfectly homogeneous with the original part, it could be distinguished by its roughened aspect, and by the absence of the smooth, compact tissue which covers normal bones.

"The ulna terminated in the olecranon of new growth, which formed with the original bone an obtuse angle, opening anteriorly in such a manner that the boundaries between the old part and the new were easily made out. This olecranon thus formed a sort of hook which, placed behind and between the new tuberosities, locked into the humerus and insured firmness in the joint.

"Just within the point of articulation of the olecranon and the posterior aspect of the humerus was found, on the new internal condyle, a well defined depression lodging the ulnar nerve in its normal position. The radius terminated in an enlargement formed of new bone, but without the cup-shaped depression.

"All these new growths were covered by a thick periosteum. The different muscular insertions, which had been detached at the time of the operation, were restored in their normal relations. The muscles themselves were pale and atrophied on account of long disuse. Between the two condyles of the humerus was a tough, fibrous mass, covered anteriorly by fat. The articular surfaces were not yet enclosed in their cartilages. The return of suppuration in the elbow had not only prevented the completion of the reparatory processes, but had occasioned the various changes which belong to chronic inflammation of the joints.

The second patient had died of albuminuria, a year after the operation. In spite of the unfavorable conditions under which he lived, his health having been satisfactory only from the second to the sixth month after the resection, I found at the side of the humerus two projecting, thickened growths of bone, one directed inwards and downwards, and the other outwards and downwards, so as to form a sort of socket, preventing all lateral motion of the ulna and radius. The ulnar nerve was imbedded in an osteo-fibrous depression behind the internal condyle. The olecranon, of irregular shape, gave attachment to the tendon of the triceps muscle by a series of detached bony nuclei. The reproduction of the large condyles appeared in this case especially interesting, on account of the age of the patient, previous investigations having tended to prove that complete repair is not to be expected in the adult.

"All the muscular insertions which had been detached in the operation were found reëstablished in their normal relations on the new growth of bone, as in the first instance.

"These results are confirmatory of the utility of the operation which aims at the entire preservation of the periosteo-capsular sheath of the joint, including all the fibrous tissues, the periosteum, tendons and ligaments which cover the ends of the bones and limit the articulation. The periosteum serves directly in the repair of the extremities of the bones, and, in cases in which this restoration is imperfect on account of the age of the patient, the preservation of the media of union and of the power of motion still furnishes a useful joint, the muscles continuing to act on their respective bones through the intervention of the periosteum."—*Boston Med. and Surg. Journal.*

THE TREATMENT OF THE INSANE WITHOUT MECHANICAL RESTRAINTS.

By Henry Maudsley, M. D.

TOWARDS the end of his life the late Dr. Connoly was wont frequently to express his fear lest there might at some future time be a recurrence to the practice of using mechanical restraint in the treatment of the insane. Recent events have shown that his apprehensions were not so vain as they then appeared. The injuries that have occurred to patients in some of our large asylums have caused certain writers to hint doubts of the value of the so-called non-restraint system, while others have gone so far as to advocate openly the use of the strait-waistcoat. They would have us give up a system of treatment which has been considered by English alienists to be the great merit of English asylums, has hitherto been zealously defended by them against the attacks of foreigners, and has now become so general, that there is hardly an asylum in this country in which a strait-waistcoat would be found. I cannot help thinking that those who contemplate such a retrograde step have failed entirely to grasp the principle upon which the non-restraint system is founded, and that in this matter they are very ill adapted to be public instructors. It seems proper that an earnest protest should at once be put on record against doctrines which I believe to be inhumane and unscientific, in order to prevent the harm which their adoption would in no long time assuredly entail.

It would be an easy thing to fasten an insane person's limbs, so that he need not be much trouble to those who have the care of him; and if that were proper treatment, not much skill would be required to carry it out. Attendants, for the most part, would be glad enough to have recourse to a measure which would obviate the necessity of patience, forbearance and watchful supervision on their part. It might be no small relief too to the mind of the physician in charge of an asylum to know that a troublesome patient was effectually secured from doing harm to himself or others, and that he need feel no anxiety on account of the possible negligence or impatience of his attendants. The real question, however, is whether the patient would be a gainer by such a method of rendering him harmless. Past experience certainly does not favor the opinion that he would, but, on the contrary, affords strong reasons to believe that he would suffer much injury without any compensating benefit. The system of mechanical restraint has had a full trial in this country and in other countries, and whosoever may desire to see it tried again would do well, before giving utterance to his wish, to read carefully the accounts of the cruelties and horrors disclosed at the inquiries into the conditions of asylums at the beginning of this century.

By its fruits let it be judged. And if the honest inquirer would have a personal experience of the soothing effects of mechanical restraint, let him try, on some warm summer's night, when tossing about restless and feverish from bodily or mental suffering, to go to sleep in a strait-waistcoat, with the sleeves of it tied together under his bed. If he were discovered in the morning, as most probably he would be, on the border of acute mania, or actually maniacal, he would furnish an apt illustration of the effects of mechanical restraint in making madness. For it is most certain that the horrible type of furious mania, which was common enough in olden times, is seldom, if ever, met with in our asylums now, simply because the old system of restraint has been abolished. The yelling, and the howling, and the violence, which were thought to be inseparable from insanity, are not witnessed now in asylums, because the insane are not brutalized by degrading restraints. In fact, exhibitions of madness were then witnessed which are no longer to be found, because they were not the simple produce of malady, but of malady aggravated by mismanagement.

It should be borne clearly in mind that the abolition of mechanical restraint is not itself a principle, but a detail of practice founded on the principle which inspires what is called the non-restraint system. A very bad system of moral management might prevail where no actual corporeal restraint was used, and, on the other hand, it is possible, though not probable, that means of restraint might be used occasionally, and yet the management of patients be in other respects good. To scold, bully or punish an insane patient would be almost as injurious to him, and certainly as contrary to the true principle of the non-restraint system, as to apply mechanical restraint. Experience proves most decidedly how beneficial is the influence of a good attendant, how pernicious is the influence of a bad attendant, on a patient suffering from mental disorder; the patient will degenerate under the indifference and harsh usage of an ill-tempered person as plainly as he will improve under the sympathy and gentle behavior of a kind and considerate person. I have more than once known instances of patients who have, without exaggeration I may say, been cured by a judicious change of attendant. The greatest of difficulties, indeed, in the treatment of the insane is to obtain suitable persons to fill this trying and most responsible position. Qualities of head and heart are demanded such as would secure for their possessor higher remuneration and less onerous duties in a more eligible vocation. The accidents and injuries in asylums, which have lately excited so much attention, have indicated the weak point in asylum management: the want of a properly trained and high class of attendants, and of an adequate supervision of these immediate guardians of the insane by officers of a higher standing. It is to be feared that patients are in some instances left too much at the mercy of attendants. Now to leave an insane person at the mercy of a coarse, violent and ignorant attendant, is to adopt the surest way of rendering him furious, unmanageable and finally incurable. With his delusions of suspicion or fear he mingles inseparably the realities of the treatment to which he is subjected, and if this be at all harsh and unsympathetic, he naturally becomes furious, and resists it with all the energy of his frenzy. His delusions are thus strengthened and fixed, whereas, by gentle usage and sympathetic attention his confidence is gained, and they are gradually undermined. Angry usage, nay even an angry word, sometimes does incalculable mischief. It is easy to perceive that if a patient imagines himself to be in hell, or about to be murdered, and those around him to be devils or murderers, as happens now and then, he is not likely to be disabused of his morbid idea by devil-like treatment. The principle of the non-restraint system, in the true acceptation of the term, is, whilst avoiding a meddlesome interference, to make all the surroundings of the poor lunatic as tranquil, as orderly, as gentle as may be consistent with his proper care—to counteract the commotion in him by an absence of commotion in what is around him. The lunatic cannot, any more than the sane person, resist the steady influence of his surroundings; he assimilates them unconsciously, and they modify his character for good or for evil.

How little a system of mechanical restraint fulfills the conditions of the just principle of treatment is so plain that a wayfaring man, though a fool, can hardly fail to see it. An excited, active patient, urged by an uncontrollable instinct of movement, desiring and needing above all things freedom of limbs, is secured hand and foot by mechanical appliances; with what result? That he is provoked into furious mania, expends his energy in shouting and raving, and becomes dirty in his habits; dirtiness in some shape is, in fact, unavoidable under such circumstances. But it may be argued, as it is sometimes argued, that it would be better for the patient to be so restrained mechanically than to be restrained by the efforts of attendants, who, in the excitement of struggling, are apt to overpass the limits of a temperate exercise of force, and to proceed to passionate acts of violence. No doubt, if it were necessary to have such struggles where restraint was not used, and not necessary to have them in order to apply restraint, there would be something to be said in favor of its use. But it is very seldom necessary to have a physical contest with a patient; indeed, if contests of the kind were of frequent occurrence, it would be strong evidence of a bad moral tone in the management, and of a neglect of proper medical treatment. If the whole treatment of acute insanity consisted, as some persons seem to imagine, in mastering the patient by physical force, and in endeavoring to stifle excitement by means of opium and other sedatives, there can be little doubt that violent struggles and restraint in some form or other would be found necessary. But if an indiscriminate use of sedatives be avoided, and a rational medical treatment be directed to the bodily disorder which will commonly be found to accompany mental derangement; and if, furthermore, the moral management be sympathetic and prudent, it will seldom be necessary to resort to physical violence.

Let it not be supposed, moreover, that the imposition of mechanical restraint does away with scenes of violence. Far from it; it encourages them. Much violence must usually be used in order to apply the means of restraint, a desperate contest occurring before the patient is overpowered and left helpless, exhausted and furious, and with a bitter sense of degradation. Such struggles breed similar struggles, and the restraint used necessitates a frequent recurrence to it. There can be no greater fallacy than that of supposing what is called a moderate use of mechanical restraint to be consistent with a general plan of treatment in other respects humane and beneficial. It must be dispensed with altogether, or deterioration will ensue in the patient, and all kinds of neglect and tyranny will be engendered by degrees, until restraints become the usual substitutes for forbearance and watchful attention. As one great argument against slavery was that it demoralized the slaveholder, so a very bad effect of the employment of restraint in dealing with the insane is that it demoralizes attendants. And on this ground, if there were no other grounds, it is necessary that the abolition of restraint should be absolute to be efficient; the principle of the non-restraint system will admit of no compromise.

It must be allowed that when called to treat an acute case of insanity in a private house, it is not always so easy to do without restraint as it is in an asylum, where there are suitable appliances for meeting the difficulties which the excitement and violence of a patient may present. But if a medical man finds it absolutely necessary to employ mechanical restraint, he should, if he has the welfare of his patient at heart, send him elsewhere; for either it is not a fit case for private treatment, or he is without the requisite assistance and qualifications for treating it properly. The attendants on whom he depends are probably ignorant and incompetent. If he has obtained them by application to some of those advertising institutions which profess to supply trained nurses for all sorts of cases, knowing nothing himself of their character and attainments, the chances are great that they are of a very bad type, either having had no proper training, or having been discharged from asylums. It is within my knowledge that, in some instances, attendants discharged from asylums for negligence and ill-treatment of patients have unhappily obtained employment, either directly from medical men, or indirectly through the medium of an advertising institution. One institution of this kind was, in fact, established by a discharged attendant, and was the refuge of a class of persons, some of whom, if they had found their right place in the world, would have found it on the treadmill. No wonder if mechanical restraint appears necessary where such persons get employment as attendants. They have done so, however; they are doing so still, and it is to be feared will continue to do so in the future. It would be a grievous error to accept the evil results flowing from their inhumanity or incompetency as evidence against the worth of an enlightened and humane practice.

It should be clearly understood, by those who feel any doubt of the value of the non-restraint system, that although it is not fully adopted in foreign asylums, it has been warmly advocated by the most eminent foreign alienists who have witnessed it in operation in English asylums. Morel, of Rouen, after living some time in an English asylum, in order to make himself practically acquainted with its working, became and has since been one of its warmest supporters. The late Professor Griesinger, who, once an opponent of non-restraint, made a journey to this country specially to examine into its merits and alleged demerits, became an earnest defender of it, and applied it with great success in the asylum connected with the Charité at Berlin. Ludwig Meyer introduced it, with the most beneficial results, into the asylum at Hamburg, over which he formerly presided. Others have followed and are following in the wake of these distinguished men. With such testimony coming from abroad, it is somewhat sad to find that doubts should arise in the country in which the non-restraint system had its birth, and has attained its fullest development. I cannot think that, in face of the irrefutable evidence of experience, they will have a long vitality, and I certainly do not hesitate to express a strong personal conviction that the use of mechanical restraint in any asylum, public or private, is an indication of a badly managed institution, and that its use, in the treatment of private cases, is unnecessary and prejudicial. Where it is entirely dispensed with there will be less excitement, fewer scenes of violence, less need of secluding patients, and earlier and more numerous recoveries than where it is in use. For it is not only an evil itself, but it is the fruitful parent of a multitude of ills, not the least of which is the certain deterioration of all who have any part in its employment, whether suffering or doing.—*The Practitioner*.

A GERMAN medical journal mentions the case of a man who had committed several murders, and who appeared to be insane, was put under the influence of chloroform. As he began to revive, he answered questions with truth and reason. As soon as complete consciousness was restored, he saw that he betrayed himself, and made a full confession.

THE EXACTNESS OF MEDICAL SCIENCE.

A FAVORITE subject for essays and addresses now-a-days is the tendency of modern medicine. Reformers flatter themselves that the exhibition of medicaments *per se*, that is, of drugs, is either about to be put away altogether as among the obsolete furniture of a past age, or else that hereafter they will only be administered in accordance with strictly scientific rules deduced from their physiological action.

We frankly confess to being skeptical about either of these sanguine views. It is our confident belief that to discard drugs, either wholly as the orthopraxists do, or in great measure, retaining only a few anodynes, tonics, and anti-periodics as a great many neopraxists among regular physicians take pride in doing, is deliberately to deprive oneself of a means not second to any at our command to combat disease and postpone death. Most persons who adopt this view have been led to it by a too earnest desire to see in therapeutics an exact science. This is not and cannot be.

We will explain why:

All exact sciences, except those which are based upon mathematics, are strictly empirical, in the sense that their laws are merely the constant results of repeated experiments. Their *exactness* depends entirely upon the constancy of these results, and this in turn rests upon the number of factors which are embraced in the experiment. Just in proportion as the number of factors increases is the number of influences increased, which may modify the result, and the law derived from it, therefore, is rendered more uncertain, or, at least, more general and vague.

Now, the factors which enter into all therapeutical experiments are in the highest degree complex and numerous. The one is, we will say, the material itself, usually an organic, or, at least, a compound inorganic substance; the other the human system, than which no more complicated factor, none more subject to idiosyncrasies and individual peculiarities can be found. How impossible, therefore, ever to expect certain results.

How can any certain inference be drawn from the body in health to the body in disease? The physiological effects of drugs are extremely deceptive guides to their therapeutic powers. Is it an unfair manner to put the question to say that we might as well assert that because sausage and cheese agree famously with one in health, that, therefore, we should consider them admirable remedies in disease? At any rate the familiar example of food admonishes us that what strengthens in health may poison in disease.

While we would warn against any extravagant hopes of discovering the *rationale* of medicine, we do it simply to prevent the reaction which takes place when finally such hopes are disappointed, as they must be. Recently in this journal a writer showed how vain have been all attempts to explain the action of mercury. Yet not he nor any sound practitioner has, for that reason, renounced its employment. It is enough, and it is all we can ask, if in many complaints a guarded and extended *experience* shows it is beneficial. So it must be with all medicaments, and any one who asks more than this, so far from meriting any eulogia as more scientific in thought, merely shows that he has not well considered on what basis the inductive sciences depend, and how far it is possible for medicine to be reduced to exactness.—*Medical and Surgical Reporter.*

CLINICAL TEACHING.

THE tendency of the medical mind seems to be more and more, every day, in favor of Clinical Instruction, and we believe that the more our young men are made familiar with disease at the bedside, and are enabled to watch the practice of their seniors in the case of accident or disease, the better will it be for them, the better will it be for the people, the better will it be for the future of the profession, and the less likely will we be to have those suits for malpractice, which every now and then create such dismay, annoyance, and expense among the whole body of the profession, and the less likely will we be to have that discrepant medical testimony, which is now so invariably given on these occasions, and is the cause of so many sneers and gibes at our expense. No greater mistake was ever made than when young men were sent out to contend with diseases and accidents, in districts far removed from counsel or assistance, without having had the most ample opportunity afforded them of studying diseases and accidents, as they actually present themselves, in the wards of a large hospital. But we hold that it is comparatively little use for a student to walk the wards of the best appointed hospital, unless some older head takes an interest in pointing out to him the various phases which the same disease is capable of presenting at different times, and instructing him how to discriminate between diseases which often resemble each other very closely in outward appearance, but differ very widely as to their essential characters. This brings us back to the old question of clinical instruction, and the possibility of getting it more fully recognized in our own hospital, which, after all, furnishes a fair amount of material for instruction, if it were only utilized.

When we look over the announcements of the American schools, we are struck with the prominence which they all justly give to this department of their courses, and the ample provision being made, even by the oldest and most conservative of them, for its efficient treatment. Even so old an institution as the University of Pennsylvania has been compelled to follow the popular current, and a few weeks ago appointed no less than six clinical lecturers.

We think the present rather a favorable time for the inauguration of this new feature in connection with our Toronto schools, and that an effort should now be made to reorganize our existing medical schools, or to establish a new one altogether, on the recognized basis of clinical teaching, and we are fully persuaded that if this be done, that school, whichever it may be, that most fully carries out the principle, will occupy the foremost place among our educational institutions, and will receive the most hearty approval of the public, the profession, and the future medical students.—*Dominion Medical Journal.*

Pharmacy.

SULPHO-CARBOLIC ACID, AND THE SULPHO-CARBOLATES.

By A. B. Lyons, M. D., Professor of Analytical Chemistry in Detroit Medical College.

WHEN ethylic alcohol is mixed with its volume of concentrated sulphuric acid, a reaction sets in, attended with a considerable elevation of temperature, and resulting in the formation of sulpho-vinic acid. This compound is what is termed among chemists a colligated or copulated acid. It is, in fact, an acid sulphate (bi-sulphate) of the basic radical ethyl $C_2 H_5$, (formerly written $C_4 H_5$). One half of the sulphuric acid remains free to combine with any other organic or metallic base, which may present itself under favorable conditions; the double sulphates thus formed are definite crystallizable salts, of no great stability, indeed, but chiefly remarkable in this particular—that they give none of the ordinary characteristic reactions of sulphuric acid.

It is this last peculiarity that has led chemists to speak of this and other analogous compounds as distinct acids, although they are probably to be regarded strictly as partially saturated salts. The term ethyl-sulphuric acid has been fixed upon as the most appropriate by which to designate the particular compound in question. Its rational formula is $H, (C_2 H_5) S O_4$ [old notation, $H O, (C_4 H_5) O, 2 S O_3$]. The potassium salt would be written $K (C_2 H_5) S O_4$ [old notation $K O, (C_4 H_5) O, 2 S O_3$].

The genesis of the new acid in the mixture of oil of vitriol with alcohol is explained in the following equation:

$(C_2 H_5) H O + H_2 S O_4 = H (C_2 H_5) S O_4 + H_2 O.$

$[(C_4 H_5) O, H O + 2 (H O, S O_3) = H O (C_4 H_5) O, 2 S O_3 + 2 H O.]$

This reaction is by no means unique. Many of the alcohols of the ethylic series yield homologous acid compounds under similar treatment. Thus we have formed from wood spirit, methyl-sulphuric acid; from fusil oil, amyl-sulphuric acid, etc. Analogous compounds are also produced in not a few instances by the action of sulphuric acid upon alcohols not of the ethylic series. Among these is one which is at the present time attracting a good deal of attention, from the promise it gives of swelling our list of valuable therapeutic agents. It is already quite familiarly known under the name of sulpho-carbolic acid, and we shall not, therefore, attempt to substitute in the present paper the more exact and scientific term, phenyl-sulphuric acid.

We are indebted to the masterly researches of the chemist LAURENT for the discovery of this, among a multitude of other derivatives, useful, interesting or curious, from ordinary coal tar. As early as the year 1841 Laurent published an account of the acid, which he named sulpho-phenic, and of the more important of its salts.

Sulpho-carbolic acid is produced by the action of strong sulphuric acid upon phenol, the alcohol of the phenyl group, commonly known as carbolic acid. One equivalent of phenol with one of sulphuric acid yield one of the acid sulphate in question. Expressed in symbols, $(C_6 H_5) H O + H_2 S O_3 = H (C_6 H_5) S O_4 + H_2 O.$ $[C_{12} H_5 O, H O + 2 (H O, S O_3) = H O, C_{12} H_5 O, 2 S O_3 + 2 H O.]$ If equal quantities, by weight, of oil of vitriol and carbolic acid are mixed, and heat is applied till the temperature of the mixture rises to 280° F, combination is pretty rapidly effected. It is desirable to perform this operation in a retort or closed flask, to avoid loss of material by volatilization. When the acids are mixed, the temperature rises at once to about 140° F. It must be raised still further by the heat of a sand bath, until it reaches 280°, at which point it is to be maintained for fifteen or twenty minutes, or till a portion of the mixture is found to dissolve readily and perfectly in a little water. It is recommended by Prof. Procter, in the *American Journal of Pharmacy*, that the mixture be allowed to stand in a warm place for 24 hours before the reaction is regarded as complete.

Dr. Hager digests the mixture for two or three days over a water bath at a temperature of 125° F, but the first method will usually be found more convenient. Whatever plan is adopted, a portion of sulphuric acid always remains uncombined, and even when the materials are to all appearance quite pure, the crude product is always of a reddish or amber color.

In a series of experiments instituted in the laboratory of the Detroit Medical College to ascertain the proportions of sulphuric acid and phenol requisite to secure a maximum yield of the compound acid, the following results were obtained:

Equal quantities of sulphuric acid being employed in each experiment, the amount of sulpho-carbolic acid formed was determined by the loss in saturating power sustained by the acid, tested by the volumetric method with standard solution of caustic soda. Four mixtures were made. In the first, the ratio of sulphuric acid to phenol was 49:94; in the second, 49:62; in the third, 98:90; in the fourth, 295:94. It will be seen that in No. 1 two equivalents of phenol were employed for every one of sulphuric acid ($H_2 S O_4$). In No. 3 the acid was slightly in excess of the theoretical quantity, viz: one equivalent of each; while in No. 4, three equivalents of acid were taken to one of phenol. The phenol employed in these experiments was Calvert's No. 2.

The saturating power of the acid was reduced in

No. 1	from	100	to	52.62
No. 2	"	100	to	54.38
No. 3	"	100	to	55.26
No. 4	"	100	to	83.05

There remained of free sulphuric acid, precipitated with a volumetric solution of barium chloride, in No. 1, 5¼ per cent, in No. 2, 8¾ per cent, in No. 3, 10½ per cent, in No. 4, 66½ per cent. There must, therefore, have remained uncombined in the first experiment not less than 50 per cent of the carbolic acid employed, and yet these are the proportions that have been recommended by several recent writers on this subject. In No. 2, the loss of phenol amounted to about 28 per cent; in No. 3, to 7½ per cent; in No. 4 there was no appreciable loss. The great excess of sulphuric acid employed proved, however, a source of serious embarrassment in subsequently preparing the salts. Practically, therefore, we would recommend about the proportions employed in No. 3, viz: 90 parts, by weight, of carbolic acid to 100 of oil of vitriol.

The pure sulpho-carbolic acid may be obtained by first saturating the crude acid with barium or lead carbonate, purifying the salts thus obtained by repeated crystallization, dissolving in water, decomposing with an equivalent quantity of sulphuric acid, filtering and evaporating *in vacuo*. As thus prepared, it is described as a syrupy liquid, of an acid, peculiar taste, quite free from color and empyreumatic odor. For practical purposes it is not necessary to obtain the acid in a state of purity. The crude acid, if made from tolerably pure materials, may be employed to form the various sulpho-carbolates, being saturated directly with the carbonates or oxides of the respective metals. In certain cases indirect methods, by double decomposition, may be preferably resorted to, in order to avoid contamination of the product with sulphates. If the carbolic acid employed be impure, the salts formed by the direct process are stained of a deep rose color, approaching the tint of certain manganese salts, and repeated crystallization is requisite to obtain them in a state of purity. The salts, when quite pure, are perfectly colorless, and free from all disagreeable odor. They are all soluble in water, alcohol and glycerine, thus differing in an important particular from many of the sulphates. Their solutions are not precipitated by barium chloride, or nitrate.

They have a considerable degree of stability, suffering decomposition only by a heat of 400 to 500° F. They seem to suffer spontaneous decomposition, however, under the influence of light, acquiring a reddish tinge, and developing a decided phenylic odor. Treated with nitric acid, especially with the aid of heat, they give a fluid of a deep yellow color, changed to an orange by alkalies. The alkaline solution, on cooling, deposits yellow crystals of alkaline *picrate*, which are readily recognized by their explosive character, as well as by their intense bitterness and the yellow stains they produce. Treated with a mixture of hydrochloric acid and potassium chlorate, a red compound is formed (trichlorophenic acid ?) which collects in oily drops, and partially solidifies on cooling. With per-salts of iron sulpho-carbolic acid and sulpho-carbolates produce a fine violet color, resembling closely that produced by the essential oil of wintergreen.

The salts of this acid which promise to be most useful are the sulpho-carbolates of sodium, calcium, zinc and lead. Sodium sulpho-carbolate [$Na\ (C_6\ H_5)\ S\ O_4 + 2\ H_2\ O$] is readily made by saturating with sodium carbonate the crude sulpho-carbolic acid, previously diluted with twice its volume of water. The following working formula is recommended: Take of

Pure crystallized carbolic acid	16 troy ounces.
Sulphuric acid (sp. gr. 1.84)	18 "
Distilled water	3 pints.
Crystallized sodium carbonate	q. s.
Barium carbonate	q. s.

Melt the carbolic acid by placing the bottle in warm water, and mix it with the sulphuric acid, gradually added, in a quart flask, set on sand bath, and heat to 280° F. Maintain the heat at that point for fifteen or twenty minutes; dissolve the syrupy mixture, after cooling, in the water. Saturate one-fourth of this solution with the barium carbonate, and the remainder cautiously with sodium carbonate, avoiding excess. Mix the solutions, reserving a fluid ounce of the first; filter a little of the mixture and test it with chloride of barium for sulphuric acid, and with dilute sulphuric acid for barium. If it give a decided reaction with the former, showing that sulphuric acid is still present in considerable quantity, add the reserved solution, or so much of it as may be necessary, taking care not to use any excess. Filter the fluid; evaporate on the water bath to the measure of three pints, and set aside to crystallize. The mother liquor, after the crystals have been separated, may be evaporated to obtain a second crop of crystals, which will be found nearly as pure as the first. Should the crystals thus obtained be of a pink color, the salt must be dissolved in hot water (about three times its own weight) and recrystallized.

The process just described is sufficiently simple and easy of execution, and yields uniformly satisfactory results. It may be modified by the substitution of lead carbonate for the corresponding barium salt, where the latter cannot conveniently be procured. Calcium carbonate will answer nearly as well, provided it can be obtained free from iron.

Prof. Procter recommends to saturate the crude acid, after dilution, with powdered carbonate of soda, added cautiously, avoiding any excess of alkali, which deepens the rose color of the fluid. The first crop of crystals obtained from the filtered fluid will be nearly free from sulphate, and will amount to about two-thirds of the total yield of sulpho-carbolate. Subsequent crops of crystals, however, will be largely contaminated with sulphate, from which they are to be freed by repeated crystallizations, or by solution in hot alcohol.

According to another plan, which may sometimes be resorted to with advantage, the whole of the acid is first saturated with barium, calcium or lead carbonate, and the filtered solution is then decomposed by an equivalent quantity of sodium sulphate or carbonate in solution. These methods, *mutatis mutandis*, are equally applicable to the preparation of the sulpho-carbolates of potassium, magesium and zinc, and have hence been described somewhat at length.

The sulpho-carbolate of sodium crystallizes in rhombic prisms, which, when pure, are quite colorless, and emit but a very faint odor, at most, of carbolic acid. They contain water of crystallization, but are permanent in the air. The salt has a somewhat sharp saline taste, less bitter and disagreeable than the sulphate of sodium. It is decomposed by a heat exceeding 500°, inflammable fumes being copiously evolved; the carbonaceous residue contains sodium sulphate and sulphide. It dissolves in about five parts of cold water, and is soluble, likewise, in alcohol and glycerine.

As a therapeutic agent, sulpho-carbolate of soda has been employed with benefit in the later stages of pulmonary tuberculosis. It is stated that under its use patients gained in flesh and appetite, while the antiseptic power of the remedy was evidenced by the diminished fetor of the expectorated matters and by the amelioration of hectic symptoms. The salt appears to possess no active poisonous properties, half a drachm to a drachm having been frequently administered at a dose, without producing any marked effects. It has been tried as a substitute for carbolic acid in the treatment of various zymotic diseases, and possesses a decided advantage over that agent in that it is nearly free from disagreeable odor and taste. Whether it will prove equally efficacious remains yet to be seen. It is certain that its power to arrest fermentative and putrefactive processes is far inferior to that of uncombined phenol. It has been employed successfully to allay nausea. As a local application it has been highly recommended in the treatment of ozœna and chronic catarrh, here again manifesting decided antiseptic properties.

The dose for internal administration is stated to be from three to thirty grains, repeated several times a day. As a local remedy in catarrh, a solution containing from three to eight grains to the ounce is used.

Calcium sulpho-carbolate can be prepared easily by saturating the crude acid, diluted with water to about twice its volume, with marble dust, filtering off the insoluble sulphate of calcium, and evaporating to crystallization. The pure salt is readily obtained in large tabular crystals, free from color and odor. If the sulpho-carbolates prove to be valuable antiseptic agents, this one will doubtless be extensively employed, especially for disinfecting purposes, and in the preservation of meats, etc. It may be found useful, too, in surgery, as an antiseptic dressing for wounds, but it has not yet received a trial.

Lead sulpho-carbolate may be easily prepared by the direct method. It is readily soluble in water, the solution having the peculiar sweetish astringent taste characteristic of lead salts. It crystallizes with some difficulty in minute prisms arranged in radiated clusters.

This compound promises to be of value as a sedative application in the treatment of local inflammations, sprains, bruises, etc., where lotions containing lead are commonly employed. In certain cases of diarrhœa it will, perhaps, be found to combine the advantage of its several constituents, all of which are employed as astringents in the treatment of disorders of the bowels. It is worthy of trial, especially in the incipient stages of epidemic cholera.

Zinc sulpho-carbolate has been more thoroughly tested as a therapeutic agent than any of the other sulpho-carbolates, and it has acquired already a high reputation. It may be prepared as recommended by Dr. Hager, by mixing solutions of barium sulpho-carbolate and zinc sulphate in equivalent proportions, filtering off the precipitated barium sulphate and evaporating to dryness. A simpler method is the following: Take of

Crude sulpho-carbolic acid	12 troy ounces.
Lead carbonate	q. s.
Zinc, granulated or in slips	4 troy ounces.
Distilled water	4 pints.

Dissolve the crude acid in the distilled water, saturate with lead carbonate, added in successive small portions, as long as effervescence is produced; filter, and place in the clear solution the zinc, which should be free from iron. Set aside for 24 hours, or till a little of the fluid, when tested with potassium iodide, gives no yellow precipitate of lead iodide; decant the fluid and evaporate by a water bath heat to crystallization, filtering if necessary. It is customary to simply evaporate the salt to dryness, without attempting to obtain it in crystals. The salt, as thus prepared, forms solid masses or granules, having usually a pink tinge and retaining a slight odor suggestive of that of phenol. The crystals, which are easily obtained, are brilliant tables or scales, quite colorless and free from odor, but liable, to a certain extent, to decomposition by exposure to light. The crystals contain seven equivalents of water of crystallization, which is mostly expelled when the salt is evaporated at once to sensible dryness. The salt has a disagreeable metallic taste, is very soluble in water, and exhibits the usual reactions of the sulpho-carbolates.

Zinc sulpho-carbolate is said to possess the combined virtues of carbolic acid and the zinc salts. It has been employed with success as an injection in gonorrhœa (three to five grains to the ounce), as a dressing to burns and wounds, and as an astringent in chronic diarrhœas. It is stated on the authority of Dr. Hoffman, of New York that "it has been introduced into the Berlin Charité with such success that it has been adopted among the remedies of that famous institute." It is also growing into favor with practitioners in this country, and is likely to become one of the standard articles of the Pharmacopœia.

Items.

IN the recent Vanderpool trial, at Kalamazoo, Mich., Dr. Duffield, Professor of Chemistry in the Detroit Medical College, gave some interesting testimony with regard to the crystals of hæmatoglobuline obtained from blood. These crystals from human blood are, according to Virchow, Beale and others, invariably rectangular in form, and in this respect differ from such crystals obtained from the blood of many other mammalian animals.

PROF. GROSS, in the *American Journal of Medical Sciences*, describes a neuralgia of the jaw bones, whose only effectual remedy is excision of the affected alveolar process. The pain is caused by the encroachment of osseous matter in the canals through which the minute nerves pass. The seat of pain is often only a few lines in extent.

DR. WEINLECHNER, of Vienna, calls attention to catheterism of the larynx as being, next to tracheotomy, the safest resort in cases of imminent suffocation during croup and diphtheritis.—*Medical Record.*

WARM water injections are highly recommended in the radical cure of hydrocele by Prof. Albansee.

THE *Technologist* contains a clear exposition of the respective properties of deodorizers and disinfectants. Among the latter it gives the first place to dry earth, charcoal and carbolic acid. The latter is especially valuable, because it *seeks* the offending gases and does not wait for them to approach, as in the case of the charcoal.

TO RENDER dress goods uninflammable prepare a solution of tungstate of soda (spec. grav. 1.140) and add to this three per cent of phos. soda. The goods should be moistened with this solution just before being starched. They may afterwards be ironed and finished without difficulty. Articles prepared in this way can be charred but will not burst into a flame.—*Technologist.*

AT a recent meeting of the Buffalo Medical Association, Dr. Miner presented a case of remarkable recovery after compound fracture of the lower ends of the tibia and fibula. The leg of the patient was caught in a boat line and the two bones separated at the lower epiphyses and driven through the soft parts on the inner side of the leg, making great laceration and contusion of the muscles and denuding the protruded portion of the bones of periosteum. The patient was directed to Dr. Miner, for the purpose of amputation, as the injury was such that no expectation of saving the leg was entertained. The bones were, however, returned to their places and a good recovery with a strong and useful limb was finally secured. It was, however, found necessary to remove two inches of both bones by exsection. After recovery, it was found that, although two inches of bone had been removed, the shortening in the limb amounted to only one inch. The patient was only eighteen years old, and, doubtless, new bone was formed to such an extent as to remove half the shortening. This is an interesting instance of the value of conservative surgery.—*Buffalo Med. Jour.*

DR. M. A. CHASE, of Siruoza, Wisconsin, recently performed the operation of ovariotomy, followed by recovery. The patient was a maiden lady, 35 years old, who also had disease of the mitral valve of the heart. Tapping had been performed twice before the time of operating.—*Chicago Med. Exam.*

Dr. Moses Gunn, in his report on surgery to the Illinois State Med. So., states the following conclusions with regard to the excision of the hip-joint:

I. The immediate risk of the operation is not great; death, when it occurs, being rarely expedited by the operation.

II. The prospects of cure are greatly influenced by age, the operation being much more successful in childhood than after maturity.

III. When the operation is resorted to, it should be freely executed and all points of disease, either in the femur or acetabulum, completely removed.

IV. A free drain upon the wound should be maintained until healing from the bottom occurs, for healing without suppuration is unattainable even by the use of carbolic acid, and the presence of purulent accumulations greatly endangers a good result.

V. Only moderate extension during the healing process should be attempted, but that moderate extension is imperative.—*Chicago Medical Examiner.*

The Chicago Medical College no longer admits women to its teachings. Dr. Davis states that the ladies were well treated by the young men and that no serious difficulty occurred, but that patients objected to appearing in the clinic before mixed classes. This course, on the part of that college, is rendered more proper from the fact that a Women's Medical College, with an able faculty, has recently been established in Chicago.

Prof. Bumstead, of New York, is decidedly opposed to syphilization.

H. Gibbons, M. D., gives three reasons why the gums of children should not be lanced. First—It gives pain to the child; second, the cicatrix causes increased difficulty in teething; third, there is danger of excessive hemorrhage. This seems to cover the ground on one side of the question.—*Pacific Medical and Surgical Journal.*

Prof. Fordyce Barker, of New York, in a recent pamphlet on the subject of croup, says that in the very incipient stage of that disease it is advisable to give *turpeth mineral* (Hydrarg. Sulph. Flava.) The dose for a child three years old is three grains. Powders of this kind should be kept ready in families for immediate administration when needed. The turpeth mineral not only produces emesis safely and easily but acts upon the mucous membrane of the parts in a specific manner peculiar to itself.

Editorial.

PULICATIONS RECEIVED.

EIGHTH ANNUAL REPORT OF THE STATE BOARD OF AGRICULTURE OF THE STATE OF MICHIGAN, for the year 1869. From the President of the Agricultural College, Lansing. Pp. 503.

We find much valuable information in this volume in relation to the capacities of Michigan, particularly the western portion, for growing fruit. The account of the condition of the Agricultural College will also be of interest.

REPORT to the Surgeon-General of the United States Army on certain points connected with the histology of minute blood vessels, by Brevet Lieut.-Col. G. G. Woodward, Assistant Surgeon, U. S. A., Washington, D. C. 1870. These fine photographs illustrate well the advance which has been made in this department of science, and suggest a magnificent future for illustrated medical works. There seems to be no limit to the ability of the camera to reproduce the magnified image, but the power of the lens.

TRANSACTIONS of the Medical Society of the State of Pennsylvania, at its 21st Annual Session. 1870.

TRANSACTIONS of the Ohio State Medical Society. 1870.

ARCHIVES of Science and Transactions of the Orleans County Society of Natural Sciences. October, 1870. Vermont. The first number contains valuable articles on the Pawnees, the Mineral

Springs of Essex County, Vermont, and Indian History of Northern Vermont.

THE *Medical Times*, a semi-monthly journal of medical and surgical science. Published by G. B. Lippincott & Co., Philadelphia. Pp. 48. Price $4 per annum. This new candidate for favor appears in very handsome dress and with interesting contents.

Journal of Cutaneous Medicine and Diseases of the Skin. Published quarterly. London: Jno. Churchill & Sons.

THE *Chemist and Druggist.* London. Published monthly.

On the Origin of Diabetes, with some new experiments regarding the glycogenic function of the liver. By W. T. Lusk, M. D., Professor of Physiology, L. I. Medical College.

Good Health. Published monthly. Boston, Mass.

THE *Herald of Health*, a journal of physical culture. New York.

Wood's Household Magazine.

Henry C. Lea's Illustrated Catalogue of Medical, Surgical and Scientific Publications. 1870. Philadelphia.

Harper's Monthly, Weekly and Bazar. See advertisement on another page.

Atlantic Monthly, Every Saturday and *Our Young Folks.* Fields, Osgood & Co.

American Agriculturist. This journal is out with its usual list of premiums and inducements to new subscribers. Aside from these, each subscriber will be sure to get far more in value than the subscription price.

Cultivator and Country Gentleman. Published by Luther Tucker & Son, Albany. Weekly. To the farmer and gardener this journal is indispensable, and the new volume promises new attractions.

Gardener's Monthly. Edited by Thos. Meehan. Philadelphia. Monthly. Occupying different ground from the above, to the fruit culturist and lover of flowers, it supplies a need which would be otherwise unmet in America.

"Unquestionably the best sustained work of the kind in the World."

Harper's Magazine.

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DETROIT
Review of Medicine and Pharmacy.

VOL. V. DECEMBER, 1870. No. 12.

SPONTANEOUS GENERATION VS. THE GERM THEORY.

By Lewis H. Watson, M. D.

PERHAPS at no other time in the history of the world has the human scientific mind been so keenly exercised in relation to the origin of life as at this present epoch. "Whence comes life?" or, rather, "How comes life?" This is the universal query. Questions of this kind have vexed men for generations. Probably the work which has had the greatest influence in stimulating scientific research upon the question is Darwin's "Origin of Species."

In Dr. Hooker's address before the British Association, at Norwich, in 1868, he says: "Ten years have elapsed since the publication of the 'Origin of Species' by natural selection. Since the 'Origin' appeared, eleven years ago, it has passed through four English editions, two American, two German, two French, several Russian, a Dutch and an Italian edition. The theory of natural selection or the continuous evolution of life, *omne vivum ex ovo*, is now an accepted doctrine with a great many of our most philosophical naturalists."

Tyndall, Hooker, Huxley, and the veteran Sir Chas. Lyell, have given in their adherence to it, and Mr. Wallace, in his papers on "Philosophical Biology," is enthusiastic in favor of it. Emerson has said, "There is but one human mind." That human mind seems now bent upon discovering the secret of existence. The concentrated thought of the human scientific mind is directed toward the solving of *this* problem: *Was* vitality conferred once for all in the beginning, and has it descended by direct transmission from parent to offspring through an infinite series of gradations, occupying ages of time and myriads of changes, until the human race came upon the scene; or is it originating spontaneously around us incessantly, through the ordinary workings of matter and force? These are the questions we are asking ourselves. In this paper I shall attempt merely to give the present position of affairs, noting some of the experiments of both the Pauspermists, as those are called who favor the theory of "continuous evolution," and the Hetrogenists, or those who contend for "spontaneous generation."

How was life introduced upon the earth? Our observation tells us that continually life is being evolved from the spontaneous workings of various substances in nature. We know that life springs up in various vegetable infusions in which we can detect no previous germ. Vinegar contains a plant of sudden and rapid growth; ordinary water becomes turbid when set aside, and in a short time develops animal life in abundance; the mold upon cheese is of the same nature; yeast is a fungus which appears mysteriously and grows luxuriantly; our very babies have a parasite appear on their tongues of the fungoid character; the muscardine is a parasite which appears on the silkworm, and even the musquito has its parasite. Since these organisms appear so suddenly, and without our being able to trace them to any anticedent egg or germ, the inference was that they originated from some inherent quality in matter itself. Then arose the theory of spontaneous generation or heterogenous evolution, as some call it. Mr. Huxley gives it the name of Abiogenesis.

The Pauspermists, on the other hand, claim that these mysterious products are fully accounted for by the germ theory. Led by Prof. Tyndall, they have caught, as they affirm, the germs upon wads of cotton inserted in the necks of bottles as stoppers, and thus prevented the production of the vibrios, as they are called. M. Pasteur has performed what seems to be very conclusive experiments. For instance, it was found that heat interfered with the production of these low forms of life. The Hetrogenists claim that it was not so much a germ or egg in the air admitted, which heat destroyed, as much as some change produced in the air itself, or some modification in the character of the infusion. Upon this claim, M. Pasteur resorts to the bottles and retorts again; he admitted the air through red hot necks to previously boiled infusions, and no life appeared. He then opened some of the bottles, reasoning that if these organisms were due to some essential property in the air itself, all the bottles would produce like existences; whereas, if there were germs, all the bottles could not get the whole variety of germs and would not produce analogous organisms. All happened as he expected, and the Hetrogenists were left without a leg to stand on.

About this time, Dr. H. C. Bastion commenced some experiments. He boiled infusions of hay, turnips, etc., and admitted air through red hot necks, and some he sealed up; nearly all brought forth monads, vibrods, bacteria—those to which the air was not admitted, most abundantly. Upon this the Hetrogenists became highly elated. Dr. B. maintains he can evolve life from mineral solutions, and thinks he has found living organisms in crystals. Finally, he asserts, "There is no more reason for supposing a germ or protoplasmic nucleus necessary for the origin of an organic compound, than there is need of a primal crystalline nucleus to promote the formation of an ordinary mineral crystal."

Mr. Huxley, in his address before the British Association, refers to Prof. Tyndall's experiments to prove the air full of organic particles, and that these particles are destructible by heat. In summing up the argument he says, very cautiously: "I think it would be the height of presumption to say that the conditions under which matter assumes the properties we call vital, may not some day be brought together artificially, but I see no reason to believe it has *yet* been done." He goes on to say: "Belief is a strong term, but expectation is permissible where belief is not, and if it were given me to look beyond the abyss of geologically recorded time, I should expect to be a witness of living protoplasms evolved from not living matter."

Closely allied to the Pauspermists' theory of life, is the germ theory of disease. Mr. Huxley, in his late address, devotes some time to its exposition. He says: "Contagion and epidemics are propagated by germs which pass from person to person, are transported in the clothing, or overload the air. Many blights upon plants, the smut upon wheat and rye, the black knot which is decimating the plum trees of New England; the *polyporus officinalis*, or female agaric, is of this nature, and I have before spoken of the *oidium albicans*, or thrush, in children's mouths. Many have attributed the dissemination of cholera and scarlet fever over the country to this cause. Helmholtz, the distinguished chemist, is subject to hay fever annually, and I have known measles to become endemic in a camp through the use of dry wheat straw. An article in the *Revue des deux Mondes* on cryptogams, some time since, says: 'The myriads of microscopic spores, the germs of which are everywhere disseminated in the air, increase the work of decomposition of the organic body; they play the role of a ferment, and make it their business to transform the tissues into new products susceptible of serving in the nutrition of vegetables.'"

I have now hastily noticed the arguments and experiments of the Pauspermists and the Hetrogenists. The discussions are hot, and each party seem determined "to carry the war into Africa." Which ever way it may be decided the result will be useful to science. We wish to lift the veil that hides this seemingly inscrutable mystery of vital existence. It is not enough to say, as Bichat did fifty years ago, "Life is the sum of the forces by which death is resisted."

Prof. Tyndall bids us beware of an undue exercise of the imagination in investigating these questions, and in his recent paper read before the Scientific Association at Liverpool, he says, "I do not think the evolution hypothesis is to be flouted away contemptuously, nor denounced as wicked. If it be of God, ye cannot overthrow it; if it be of man, it will come to nought."

I think I state the feeling of scientific men when I say that the object sought is Truth, no matter how unpalatable, no matter how irreconcilable with some pet theory. And now I come back to our first query, What is the ultimate end and what the origin of what we call life? Whether we adopt one theory or the other, we can say as the old Latin poet did: "*Debemur morti nos nostraque.*" The old Greek was right when he said, "living is but to die, and dying but to live." One of our deepest thinkers, Herbert Spencer, has said: "If religion and science are to be reconciled, the basis of reconciliation must be the deepest, widest, and most certain of facts that the power which the universe manifests to us is utterly inscrutable."

An eminent living poet, F. T. Palgrave, utters this passionate cry:

"To matter or to force
The all is not confined,
Beside the law of things
Is set the law of mind.
One speaks in rock and star,
And one within the main—
In unison at times, and then apart again—
And both in one have brought us hither,
That we may know our whence and whither."

CLINICAL REPORT OF ST. MARY'S HOSPITAL.

By J. Henry Carstens, M. D.

In the surgical department of this hospital some very interesting cases have been treated since July 1st. Prof. N. W. Webber, M. D., has been in charge of this department since the above date. Some of the cases most worthy of attention we shall enumerate:

L. S., aged 51, German. This man was kicked on the lower jaw by a horse, causing a most extensive injury. The inferior maxillary was fractured at the first molar tooth on the right side; the alveolar process was loosened and the four lower incisors pressed inward, catching the upper incisors behind, pressing them forward and loosening them, so that two had to be pulled. The shoe must have been sharp and have struck the man squarely under the chin, for, beside the above enumerated injuries, an opening was found as if cut with a knife, extending from the symphisis to the groove for the facial artery. This opening passed under the tongue, and was of such a size that a finger could be easily passed through it, from without into the mouth. The duct of Riviniani and also Wharton's duct were cut, the saliva passing through the external opening.

When he entered the hospital his face was swollen, and cooling lotions had to be applied to relieve the swelling before a distinct diagnosis could be made. When the swelling had subsided, the lower incisors were fixed to the sound molar teeth by means of silver sutures, and two upper incisors were pulled; some gutta percha was molded so that it fitted perfectly, clasping the teeth behind and in front, and extending from the third molar on the one side to the third molar on the other side; this interdental splint, which kept the loosened teeth and alveola in apposition, was applied and the lower jaw firmly pressed against the upper, and bandaged, preventing any movement whatever.

At the same time silk sutures were applied to the cut and the edges brought in close apposition, adhesive plasters applied and then firmly bandaged, giving the patient strict orders not to move his jaw.

The patient presented a most pitiable sight to look at, the saliva and pus continually dribbling from the mouth; a weak solution of carbolic acid was used to wash his mouth a number of times during the day. The opening left by upper incisors was sufficient to admit a glass rod, by means of which beef tea could be passed into his pharynx. This, with milk, were the only kinds of nourishment he could take. In a week the bandages were taken off, and it was found that the bone had united; the alveolar process was also firm, and the wound had united throughout its whole extent; after carefully washing, the bandages were again applied; they were then removed daily and his injuries daily examined; he recovered rapidly. At present, he can take more substantial food, his wound having healed and the bones united. A swelling has been noticed on the right side for some days; this has been diagnosed as an inflammation of the submaxillary gland, and which will most likely open.

This case is very instructive, showing the recuperative powers of nature, and that by means of judicious treatment very severe injuries may be treated successfully without loss of tissue and very little deformity.

G. T., aged 11, of a strumous diathesis. Three months ago fell on left hip, causing some pain at the time. A few days afterwards commenced to have considerable pain in knee and to limp when walking. Two months since, entered hospital. Diagnosis, *morbus coxarius.* He was immediately confined to his bed, and extension applied to his left leg; this was kept up uninterruptedly for two months; a good and nourishing diet ordered, also syrupus ferri iodidi ten drops three times a day. All pain in the knee and tenderness of hip have disappeared, and he is able to walk; the left leg is, however, one inch shorter than the right, caused, probably by the loss of the head of the femur.

J. S., aged 14. Has had pain in hip and knee for a year and a half, also limps when walking, and has other well known symptoms indicating hip joint disease. This patient was also put under the extension plan of treatment, which is still pursued, the pain having already decreased.

J. P., aged 28. Eight years since was struck by a falling stone in a mine, causing a transverse fracture of the fibula at the junction of the middle and the lower third, and also an oblique fracture of the middle tubia. He had been treated without much success; six weeks ago he entered this hospital; the first treatment he received here was the application of a plaster of Paris bandage, thereby keeping the fractured bones in apposition and preventing movement. Still, the bones not uniting, he was directed to walk, hoping by this means to irritate and set up an inflammation of the severed bones, so that an exudation of plastic material may take place of which to form a callous. This succeeded very well, and he is now able to walk with the aid of a cane, and daily gains strength in his injured limb.

D. M., aged 21. Fracture of jaw, caused by blow, between canine and bicuspid teeth on right side; crepitus could be distinctly felt. A piece of gutta percha was molded to fit the teeth, and externally a compress was applied, thereby making the inferior maxillary immovable. He is not allowed to speak, and only liquid food is administered. He is at present getting along finely, although it is difficult to say whether he will recover without any deformity, as he has only been under treatment for one week.

N. B.—Since the above was written we hear that this patient's inferior maxillary has united perfectly, without any deformity.

J. R., aged 43, German. Walking along the railroad on a hot day in July, this man did not notice a locomotive with a train of cars slowly creeping up to him; he walked along unconscious of the danger in his rear, until the cow-catcher struck his left leg in the popliteal space. The knee and the parts struck were contused, with extravasation of blood into the surrounding tissues, and discoloration. Cooling applications were made to the injured parts. One week after entering the hospital general erysipelas set in, which was treated *secundem artem.* Abscesses formed around the knee and along the thigh and leg. Four free incisions were made, thereby allowing a free evacuation of pus; a large amount of pus has been discharged, and which still continues. Sinuses then commenced to form from one opening about the middle of the thigh to the knee, and another from the middle of the leg to the knee. A five per cent solution of carbolic acid was injected through these sinuses. Citrate of iron and quinine was given to him since he entered the hospital. He is still under treatment, and a definite prognosis can not yet be made.

J. K., aged 24, mother scrofulous. Has had pain along left leg for twelve years; two years ago was kicked by a horse, causing pain at the time and a stiffness afterwards. Three months ago an abscess formed on the outer side of the leg, and which is not yet closed. Probing the same, found necrosis of fibula. The knee is also swollen and seems to contain pus. Tonics were administrated for one week, and then the necrosis was removed by Prof. Webber. The patient, being under the influence of ether, was subjected to a most thorough examination, which revealed that the fibula was diseased to such an extent as to necessitate the removal of about one inch of this bone, leaving the head attached to the ligaments, this was done, and the wound is treated on general principles. The knee was tapped with a small trocar, and about one pint of pus removed. A weak solution of carbolic acid was injected and the opening closed. He is still under treatment, and how successful this shall be only time can tell.

Reports of Societies.

DETROIT ACADEMY OF MEDICINE.

OCTOBER 11, 1870.

Dr. Bigelow read a letter from Dr. G. W. Galloway, of Kosciusko, Mis., in relation to the poisonous character of certain plants described under the popular name of "sneeze weed."

Cattle, horses and sheep are alike susceptible to the toxic action of these weeds. Animals reared in localities where they abound are careful to avoid them, but those brought from a distance are frequently poisoned. The characteristic symptoms produced are paralysis and spasms of the limbs, and general convulsions.

Flour made from wheat that had been threshed in a lot where these plants grew, produced similar symptoms in most of those who partook of it, showing that the poisonous principle is not destroyed by a moderate heat, and that it affects the human subject in the same manner that it does the lower animals. The sternutatory properties of the weed have been long known, and have given it its vulgar name.

Specimens of the two species of "sneeze weed" alluded to were exhibited to the society by Dr. Bigelow, who explained that they belonged to the genus Helenium of the order compositæ, the one being the H. autumnale, common in low grounds throughout Ohio and Southern Michigan, the other probably H. tennuifolium, a species confined to the Southern States.

Dr. Gustin read a paper giving the history of a case of hepatic abscess (traumatic), that occurred in his practice some six years ago. The patient was a young man about 21 years of age; in attempting to leap over a small stream he fell with his whole weight across the sharp edge of a rail. In twenty-six days after the fall an abscess was opened, which appeared to be confined to the right lobe of the liver. Dr. Travers, of Port Huron, a physician of high standing and large experience, saw the case with Dr. Gustin, and recommended the operation of lancing, and about one pint of pus was evacuated. In two weeks' time the discharge of pus had nearly stopped, and in six weeks completely so, with almost entire recovery of former good health.

Dr. Inglis—I met with a case many years ago, in the practice of a brother physician, which taught me a lesson of caution in pronouncing a diagnosis of hepatic abscess. The patient, a lady, suffered all the symptoms indicative of severe inflammation. A tumor made its appearance below the ribs, and gradually increased till it extended as far as the umbilicus. I had several opportunities of examining it while the tumor was in progress of growth, and was satisfied that the liver was the organ affected. At length, after several weeks, fluctuation was detected; the abscess, which proved to be quite deep-seated, was opened; a large quantity of pus escaped, and the discharge, which was of a dark color and very offensive, continued for several weeks. The woman gradually sank, in spite of supporting treatment, and at length died of exhaustion. The autopsy revealed a *perfectly healthy liver*, the abscess being confined to the abdominal walls. I have since had a case in my own practice, the history of which was very similar to this in many respects, the termination of which, however, was a favorable one. Had it not been for my earlier experience, I should most probably have pronounced the second a case of hepatic abscess, and should have congratulated myself, no doubt, on its favorable issue.

Dr. McGraw—Abscesses not unfrequently form in the abdominal walls, exterior to the peritoneum, and have a history very similar to that of the case reported by Dr. Gustin. It seems to me that an inflammation in a glandular organ like the liver would be slower in its course and produce much more severe constitutional symptoms than those described. It seems incredible that an abscess of the liver should heal so rapidly and leave the patient perfectly well.

Dr. Lathrop—I attended a patient not long since, whose symptoms pointed to hepatic trouble. The case ended by a critical discharge from the stomach, which might have signalized the evacuation of a small hepatic abscess through that channel.

Dr. Bigelow—I once met with a case in which an abscess of the liver opened spontaneously into the stomach. There was no doubt of the fact, for the patient died, and a *post-mortem* was made.

Dr. Gustin—Cases are on record in which the healing of hepatic abscesses of traumatic origin has been quite as rapid as in my own.

Dr. Inglis—Is there any authenticated account of an instance in which a *post-mortem* has shown an abscess of the liver healed?

Dr. Andrews—A case came under my observation a few years ago in which the liver had been lacerated by a gunshot wound. The wound continued to discharge for some time, but ultimately healed perfectly. In this case the liver was certainly involved, for portions of the parenchyma of that organ were removed in clearing the wound. In any case of doubtful diagnosis the microscope will afford certain information, when the abscess has once been opened. The structure of the glandular tissue and the fibrous capsule of Glisson can be readily recognized if present.

Dr. Lathrop read a paper on epilepsy, having especial reference to the prospect of cure. He directed attention to the fact that some cases are attended with an organic change in the brain and nervous system, as asserted by Sieveking and others, while in other cases the disease is purely functional in its character. As long as the latter condition exists the case would seem to be within hope of benefit from treatment. This distinction in the cases of epilepsy, with regard to its nature, would seem to be worthy of extensive study.

Dr. Lyons exhibited specimens of the sulpho-carbolates of soda, zinc, lead, lime and ammonia—salts which have recently been employed to some extent as therapeutic agents, possessing in a measure the antiseptic and sanative properties of carbolic acid. The sulpho-carbolate of soda resembles, in appearance, epsom salts. It is quite free from the empyreumatic odor and taste of carbolic acid, although it contains one-third of its weight of phenol. It has been employed with success as a topical application in catarrh, and has been administered internally with benefit in phthisis. The sulpho-carbolate of zinc crystallizes in large, colorless crystals, having the peculiar astringent metallic taste of the zinc salts generally. It is valuable in the treatment of gonorrhœa, and is highly recommended as a dressing for burns. The solution for the former purpose may be made as strong as eight or ten grains to the ounce, if the crystals are used. For the latter use a much stronger solution may be employed. The advantages claimed for the sulpho-carbolates are, that while they possess decided antiseptic properties, they have no disagreeable odor, and their action is more gradual and permanent, although necessarily slower than that of the volatile carbolic acid.

Specimens of bromide of sodium and of muriate of hydrastia were also exhibited.

Dr. Inglis related a case that had recently occurred in his practice, of imperforate rectum. The child, when born, seemed perfectly well formed. There was an anus, but when, a day or more having passed without any evacuation of the bowels, a more careful examination was made, it was found that the canal terminated, at about half an inch from the orifice, in a *cul de sac*. Efforts to establish a communication with the rectum were futile, and the child died, with little apparent suffering, on the third day. No *post-mortem* was held.

Dr. Andrews related a similar case.

Dr. Jenks—I have seen, in possession of a physician at Pontiac, an interesting specimen in which the rectum terminated in the bladder.

OCTOBER 24, 1870.

Dr. Noyes introduced a patient having a bony tumor on the index finger of the left hand. The tumor was of an irregular spherical form, about an inch in diameter, springing from the first phalanx of the index finger. The growth was the result of an injury sustained by the patient many years ago, when quite a lad. It occasions no inconvenience, although the patient is a laboring man. He has never had it removed because he has been told that he must lose the finger with it. In the opinion of the surgeons present, however the operation might be performed with perfect facility.

Dr. Book exhibited a specimen of iodoform, which just at present is *the* fashionable remedy in a great variety of diseases. Its most important use seems to be the relief of pain and nervous distress in scrofulous cases.

Dr. Noyes—I have employed this remedy in a few cases. I find it somewhat liable to irritate the stomach. The costliness is also a serious objection to its use in very many cases.

Dr. Lyons—Many patients complain of the disagreeable and very persistent *taste* of the medicine. It seems to have a tendency to pass out of the system by the salivary glands, and hence the taste is perceived even when it has been administered in sugar-coated pills.

VERBAL COMMUNICATIONS.

Dr. Book—A patient came to me the other day with an eruption having precisely the appearance of varioloid, and running a similar course. I should have had no hesitation in pronouncing a diagnosis had not the patient informed me that he was subject to similar attacks, coming on about twice a year. Other physicians, he said, had on previous occasions made a similar diagnosis.

Dr. Stewart—I had occasion to treat a singular case of eruptive disease, not long since. The eruption, which appeared over the whole surface, consisted of little, hard, white papules, closely resembling, in form and size, a half a pea, with no sign of inflammation about the base, and disappearing without passing through any vesicular or pustular stage.

Dr. Lyster—The case seems to have been one of *horn-pox*, a mild variety, I believe, of small-pox. I had a case, when in the army, precisely similar to that described by Dr. Stewart, which was followed immediately by a number of cases of small-pox.

Dr. Andrews—A case of puerperal fever which I saw a few days ago presented some peculiar features. There was no local pain or evidence of peritoneal inflammation, the disease assuming throughout an intensely adynamic type. The lady was confined on a Saturday, and, although a primipara, had a rather easy labor. On Monday she had a fit of screaming, followed by a chill. She had been attended in her confinement and during her illness by another physician. I saw her Wednesday, when she was already moribund. Stimulants were given, with no effect to rally her, and she died the same day.

Dr. Lyster—I had a very similar case during the summer. The labor had been normal, and I had been particular to observe that the placenta came away entire. A fever of low type set in, accompanied by nausea, diarrhœa, and some tympanites, and proved rapidly fatal.

Dr. Jenks—I was called the other day to a lady who had been attended in confinement by a mid-wife. Found the patient in a low, feverish condition, the lochia and secretion of milk not wholly suppressed. There was no delirium, nor was there evidence of metritis or peritonitis, but the symptoms were not ameliorated by treatment, and the patient rapidly sank and died. I attributed this condition to purulent infection, probably resulting from imperfect removal of the secundines.

Dr. Andrews—In many cases we need not look for any unusual circumstance or condition as the cause of puerperal fever. The shock of labor is itself sufficient to account for the result when a depressed state of the system affords the predisposing condition.

Dr. Jenks—Puerperal fever is regarded by some as dependant always upon simple inflammatory action. Several conditions have, in fact, been confounded under that name. That most to be feared arises unquestionably from blood poisoning. The contagious nature of this disease and the facility with which it may be communicated by the obstetrician himself, should be always borne in mind.

Dr. Gilmartin—Apropos of this subject, I may allude to a case which I saw not long since, which was remarkable for the rapidity of its course. After death the skin was everywhere distended with gases, the epidermis being raised in many places as by a blister. The circumstances of this woman's death gave rise to suspicions of foul play. The woman, who was unmarried, had given birth to a healthy child only a few days—scarcely 48 hours I think—before I saw her a corpse.

Dr. Stewart—I once saw a dead body in precisely the condition Dr. Gilmartin describes. The cause of death in this instance, too, was obscure, but very rapid in its operation.

A. B. LYONS, M. D.,
Secretary.

Notes.

TREATMENT OF STRANGULATED HERNIA.

Dr. S. D. Gross, in a clinical lecture, published in the *Medical Times*, after describing the difference between the acute and chronic forms, states that the one form brooks no delay in treatment, while the other is often materially benefited by it. The methods of reduction in the two forms do not differ. Where there is a correct understanding of the case and a prompt application of the surgeon's art, a recourse to the knife will seldom be required. In a practice of over twenty-five years, with many cases of strangulated hernia, it had not often been his lot to be compelled to resort to instrumental interference. With the aid of chloroform, which he uses in preference to ether, as being less liable to produce nausea, and a proper position of the patient, almost any rupture, however severely strangulated, may, in its earlier stages, be successfully reduced in a few minutes.

Before making taxis the patient is placed upon a smooth, firm mattress, or upon a narrow table, or even upon the floor in preference to a feather bed; he is stripped of all clothing except a shirt; urine, if necessary, is drawn; and if the large bowel is much distended evacuate it with a stimulating enema of turpentine or castor oil.

The patient should be thoroughly under the influence of chloroform—nothing less than complete anæsthesia will answer the purpose; relax the abdominal muscles by raising the head and shoulders and by flexing the thighs, held close together, upon the pelvis. The surgeon then grasps the tumor with his right hand in such a manner as to enable him to draw the contents gently away from the opening through which they have descended, great care being exercised, so as not to rupture the bowel; the hand, still grasping the tumor, is now employed to compress it, not rudely or by fits and starts, but in as steady, gentle, equable and uniform a manner as possible—the surgeon, remembering that he is dealing with inflamed and perhaps partially softened structures, liable, if not to rupture under the force of manipulations, at all events to be seriously injured if the pressure be too violent or improperly directed. Gradually, as the operation progresses, the tumor begins to yield, and the return to the abdomen is generally accompanied by a gurgling sound, and this, with the effacement of the tumor, is a sure sign of the success of the operation. When the tumor is very large it may be grasped with both hands; when small, the fingers will do. In inguinal hernia of long standing, with unusual bulk, we can hardly go amiss if pressure is made in a straight line from below upward. In opposite conditions, where the anatomy of the parts are unaltered, the parts must be pushed in an oblique direction.

Dr. Gross is led to believe, from the numerous reports of operations, both in foreign and domestic journals, for the relief of strangulated hernia, that the simple rules he has laid down are not generally understood, or that most practitioners are destitute of experience, and consequently are timid in the exercise of the requisite manipulations.

The supine posture is the most eligible for the reduction, yet the judicious practitioner will not limit himself to it. Inclining the body strongly to one side, throwing the pelvis, as it were, into the air, with limbs strongly flexed upon the abdomen, or the patient may place himself upon his hands and knees. Another method is to apply taxis while the patient is standing up with the body strongly inclined forward, the surgeon standing either behind or in front of him. Again, the object is sometimes more easily accomplished when the abdominal muscles are put upon the stretch than when they are relaxed. In obstinate cases, provided there be no great urgency of symptoms, all these expedients are worthy of trial.

How long can the efforts at the taxis be persisted in with safety? The nature of the case must determine the rule of action. If symptoms are unusually urgent, as in acute strangulation, not more than five or ten minutes can be profitably spent in this way without doing mischief. Instead of persevering in the use of taxis two things are to be considered: first, will the case admit of further delay and of another trial of the taxis? or has strangulation caused such an amount of injury as to call for the use of the knife? These are questions which are not always easily decided. The amount of local and constitutional distress is here of far greater weight than the mere duration of the strangulation or the time that has elapsed since the occurrence of the accident. If the symptoms are mild, if there is little, nausea or vomiting, if the tumor is not very tense, painful or intolerant of manipulation, there is no need of haste; the case admits of delay and of another trial of the taxis; the contents of the tumor are still safe; the treatment is still expectant, and the first step is to place part and system in a perfect state of rest, the surgeon hoping that while they are in this quiescent condition the stricture will relax its grasp and allow the parts to return themselves or by the aid of a slight repetition of the taxis. Before the patient fully recovers from the influence of the chloroform a hypodermic injection of morphia is administered, followed by thirty grains of chloral; the tumor is covered by a bladder partly filled with ice and placed over a piece of wet flannel; thorough relaxation of the abdominal muscles is maintained; the room is darkened, noise is excluded, and the patient carefully watched. Sound and protracted sleep is most certain to ensue, or at all events perfect tranquillity, so conducive to relaxation of the system. After some hours the surgeon returns; he places his fingers upon the tumor, and finds, to his joy, that it is not only much less tender, but that it has undergone a marked diminution of tension, and even of bulk; he moves his fingers over it gently, and almost before he is aware of it up go its contents.

In another case matters are perhaps different. The anodyne and ice have relaxed the parts, but the taxis requires more force, and it may be necessary to give chloroform again. It will be found, as a general rule, that cold applications make a much more salutary impression upon strangulated hernia than warm. This is especially the case when the swelling consists mainly or exclusively of intestine. Ice, properly pounded and enclosed in a small bladder, is the most reliable agent. It should not be placed directly upon the skin, but through the medium of a piece of wet flannel, and great caution should be observed in its use lest it should cause congelation and gangrene. When ice is not procurable some refrigerating lotion should take its place. Warm applications are best in weakly, anæmic persons of a nervous, hysterical temperament. They may be combined with astringents, as sugar of lead. Flannels wrung out of hot water, overlaid with oil silk to retain the heat, are the best. The application should be continued, without intermission, for hours; otherwise there will be little benefit. Tobacco poultice sometimes unlocks the stricture; its effects must be watched with the utmost vigilance.

Tobacco enemas are no longer employed. Leeches and venesection are employed less at the present day than they should be. With great local tenderness and a plethoric patient they diminish the dangers of gangrene in the protruded structures and the occurrence of general peritonitis. Chloroform has advantageously superseded the use of the warm bath. This anæsthetic has a decided preference over all others; with proper care in its administration it is equally safe; it possesses the advantages of greater promptness of action, and much less liability of unpleasant and protracted secondary effects, as nausea, vomiting, etc. Vomiting should be sedulously guarded against in the treatment of strangulated hernia, on account of its injurious effects upon the constricted bowel and the danger of a recurrence of the protrusion.

Chloral promises to be a valuable remedy in the treatment of strangulated hernia, rapidly inducing sleep, and thus aiding powerfully in the relaxation of the system. It should be given in full doses, as thirty grains; and if much pain exist its beneficial effects will be greatly promoted by the coöperation of a hypodermic injection of morphia.

THE principal diseases of the Prussian army before Paris are said to be pneumonia and small-pox.

REV. T. E. RANNEY, of Holland, Vt., missionary among the Pawnee Indians three years and among the Cherokees fourteen years, thus speaks of the knowledge of medicine among the Pawnees:

As to their knowledge of medicine, they really have as little as of religion. We are invited to visit a lodge where one is sick with a fever; we are white men, and it is supposed, of course, by them that we can give medicine to cure the sick. But our inquiries are now to ascertain what they would do. We have seen many a handbill recommending various medicines, because it is said it was in use by the Indians, who are supposed by many to understand all medicine and to be able to heal all the sicknesses of the people. Nothing could be a greater evidence of quackery. I do not profess to know that all the tribes of Indians were as ignorant of these things as were the Pawnees, and yet I know nothing that would indicate that any knew more. If the knowledge which the Pawnees had acquired from the whites was taken away, there would be none left. Their medicine, like their religion, is but a bundle of superstition, consisting of charms and jugglery. They are easily imposed upon and made to believe in almost anything hidden and mysterious. They can be made to believe that a peculiar medicine is beneficial, as many in civilized life can; they do not, so far as I can learn, administer any medicine to affect the system. It is doubtful whether they know of any thing that would act as a cathartic. For an emetic they seem to know that tepid or warm water would produce vomiting, but it is doubtful whether they had not learned this from the whites. Some of them could at times produce vomiting by the use of a feather run down the throat. It was not known that the Pawnees ever drew blood intentionally as a remedy. Some of the neighboring tribes did, but it is probable they learned to do so from the whites. Indeed, the Pawnees learned that the whites sometimes did, and supposed it to be a panacea, and if they were ever ill when white men were about who would bleed, they were wont to resort to them with a request to be bled. I frequently saw the manner of cutting themselves practiced by two other tribes, the Omahas and Otoes, to produce blood. They usually bleed somewhere about the head, and to do it shave the hair from the part, often on the temples, sometimes on the top of the head, and then take a large knife and hack the skin up in a horrid manner over a spot perhaps as large as a dollar, and then place over the wound so made the larger end of a cow's horn, and with the mouth and lungs exhaust the air at the other end so as to cause the blood to run, till they have accomplished their object and removed the seat of disease. It was thus these tribes practiced in removing fevers. But not so with the Pawnees. Their doctors would take a different course; they would puff and blow all over the patient with the mouth in order to cool off the fever, and instead of dieting, according to the rules of our physicians, they would set before the patient all the tempting viands in their reach. Their philosophy is that while he can eat he will live, and if he does not eat his allowance he will die. Hence it seemed to be almost useless to give medicine to a Pawnee sick with a fever. If the fever is once broken, and the patient begins to recover, his appetite comes like an armed man, and it is useless to tell him he must not gratify that appetite. His maxim is eat or die, and the *fact* generally is, in such a case, eat *and die*. Their eating is not such as is required to sustain a weakened frame, but such as a sickly appetite demands. Perhaps their practice in cases of fever is most erroneous, but we saw more of this, because "chills and fevers" were first introduced among them when we were there. But they did not seem to understand the nature of any disease. They can perform no surgical operation with safety. In cases of accident they cannot take up an artery. Their diseases, in their simple life, are all of a simple kind, and they seem to have no complex diseases among them. Their practice at an *accouchement* is simply the rattling of a gourd —a child's rattle. I have lately seen a medicine advertised to cure the tooth-ache, which was said to have come from these same Pawnees. A more contemptible imposition could not well be practiced, as they were never subject to any disease of the teeth. An anodyne for the tooth-ache or a vermifuge obtained from them would be alike worthless, they having no use for either."—*Archives of Science, Orleans Co., Vt.*

An American surgeon with the Prussian army says: "In the medical conduct of the hospitals of the present war, drugs have been largely ignored. It has been the chief business of the dispensaries to furnish disinfectant, palliative and hygienic measures, while the restoration of the health has been left almost entirely to the unembarrassed efforts of nature, and this with the most encouraging results, I am happy to say. The statistics, as a whole, when they shall appear, will have great and deserved weight in doing away with the almost superstitious veneration of drugs which exists among the people, and even among the doctors as well. This I say from seeing how drugs are dispensed with in the Séminaire, while good food, good light, good air, and good nursing were insisted upon, and from knowing how generally this was everywhere the case. The number of the operations made at this hospital was immense. The unfortunate subjects of these have not done well, as a rule, and for reasons not far to seek. They came here after the most favorable time was past, having lain for days or weeks near the field where they fell, in whatever farm-houses, or barns or sheds room could be made for them, and insufficiently cared for in all ways."—*Nation.*

Dr. D. H. Agnew has lately had under his care, in Pennsylvania Hospital, a case of ununited fracture of the tibia, of fourteen weeks' standing. "The muscles of the leg were atrophied and the patient's health was below par, owing to long confinement." After being placed under the influence of ether, Dr. Agnew passed a long gimlet through the integuments on the anterior surface of the leg, and to the outer side of the spine of the tibia, obliquely upward and backward through the ends of the fragments, bringing them into accurate apposition and holding them firmly together. The gimlet was removed after thirty days, when it was found that firm union had taken place. While in, the gimlet gave rise to no sloughing or ulceration. The leg was enveloped in starched bandage for two weeks longer, the patient walking about on crutches and taking fifteen drops tinct. iron and one grain quinine three times daily, when he was discharged with a perfect leg.—*Medical Times.*

SYPHILITIC GONORRHŒA.—Prof. W. A. Hammond, of New York, in his "Lectures on Venereal Diseases," maintains the following propositions: 1st. "That the virus of an infecting chancre, when deposited on a secreting mucous surface upon which there is no solution of continuity, may give rise to gonorrhœa, unattended by chancre, but which is syphilitic in its character, and capable of producing constitutional disease. 2d. The matter of such a gonorrhœa is capable of causing an infecting chancre either by natural or artificial inoculation, which chancre is followed by constitutional syphilis."—*Medical and Surgical Reporter.*

W. J. CONKLIN, M. D., Assistant Physician of the Southern Ohio Lunatic Asylum, at Dayton, has written a valuable pamphlet entitled "Report on the Temperature of Certain Nervous Diseases." To those interested in thermometrical observations, this paper will prove of great interest. The experiments have evidently been conducted with care and diligence. Special attention has been paid to cases of insanity, but other nervous diseases have also received attention. The author's observations with regard to the use of the thermometer in the diagnosis of phthisis, are especially interesting.

ROBERT AMORY, M. D., has been appointed lecturer in the Medical Department of Harvard University on the following important and interesting subject: "The physiological action of drugs on man and the lower animals." Dr. Amory has already established a reputation from researches which he has made in this field. If more attention could be paid to this study we should doubtless make great and *real* progress toward a more rational system of administering drugs.

J. C. **REEVE**, M. D., of Dayton, Ohio, recently extracted a male gum catheter from the bladder of a woman. The urethra was distended so as to admit the finger, and along this was passed a pair of lithotomy forceps, with which the catheter was seized and extracted. It is remarkable that notwithstanding the distension to which the urethra had been subjected, the patient could perfectly control her urine on the day following the operation.—*Medical Times.*

A SURGEON in the United States army sent to the Boston *Medical and Surgical Journal* a burlesque article in praise of Spaulding's prepared glue—"ichthyocollæ preparatæ Spaldingii"—as being useful in cases of falling of the hair, etc. It received a serious review from the *London Medical Press and Circular* for May 4, 1870, which thinks that there are "far too many of such preparations in the American practice of Medicine."—*Medical Times.*

DR. JAMES RODMAN, of the Western Lunatic Asylum of Kentucky, reports a case in which 270 grains of chloral were given to a patient in less than two hours. He slept profoundly for eighteen hours and then recovered complete consciousness. No bad results followed. During this time the patient was, by considerable effort, sufficiently aroused to swallow a small quantity of water.—*American Practitioner.*

THE Lunacy Commissioners of England and Wales report for the first of January last 54,713 persons of unsound mind, of whom 48,825 were of the pauper class. This would indicate that poverty causes insanity, but also that insanity causes poverty.

ON one day in each week a lecture is delivered to female medical students in the wards or amphitheatre of the Pennsylvania hospital. We believe the cases for illustration are derived from the women's wards only.—*Medical Times.*

THE *Lancet* reports a case of cæsarian section after death, in which the child was revived, and is now three years old.—*Medical Times.*

Selections.

DERMATOLOGY ABROAD.

PERSONAL observation of the hospitals of London, Paris and Vienna, induces me to think it may prove interesting to give a brief account of dermatology in these cities—to examine the manner in which it is taught, to compare the different schools, and notice particularly the certain diseases confined almost exclusively to special countries. There are in Europe, at the present epoch, three schools of dermatology, each one holding distinctive theories and opinions, and, as usual in such cases, clinging tenaciously to its own doctrines as the only correct ones. It is only by taking a careful survey of the various hospitals and dispensaries, by looking into their management, comparing statistics, noticing the forms of disease, and, finally, by observing the treatment and its results, that we can arrive at any definite conclusions. Statistics alone will not suffice to give us a correct idea of dermatology; reports of hospitals and dispensaries merely tell us that so many cases were admitted, treated, relieved or cured, and discharged, giving no enlightenment as to the varied aspects of the same disease in different countries. Closer study is needed to show the effect of climate, habits, temperament, and other causes, all of which greatly influence cutaneous affections, deciding their appearance, form, evolution, and ultimate termination. But I shall return to this, and in the mean time speak of the German school as found in Vienna at the present day. The General Hospital, or "Allgemeines Krankenhause," is a government institution, situated just outside of the centre of the city, and encircled by laboratories, schools of anatomy, physiology, and chemistry, making this literally the students' quarter. The building is old, though in good repair, with accommodations for about two thousand patients; it is the largest hospital in the world, and for its size, a model of management. As we enter the gate, we cannot help being struck with its vast proportions and the bewildering effect of its innumerable courts and passages. Having found our way through three extensive courts, or "hofs," as they are called, a small sign-board over the door notifies us that we have arrived at the "department for diseases of the skin." This consists of eight wards, each containing about twenty-five beds, the apartments being large, well lighted and ventilated. The medical direction of this department is under the charge of Professor Hebra, a man whose renown is so world-wide, and whose name is so intimately associated with dermatology, that the bare mention of it awakens profound respect and admiration. The professor has under his care the variola wards, one male and one female, containing in all forty beds; the secondary syphilis wards, with accommodations for forty patients; and the remaining four wards devoted to the various diseases of the skin. Hence we see the department for these disorders containing beds for two hundred, and these filled to a greater or less extent the year round. Professor Hebra himself examines each and all of the cases, devoting two or more hours every day to the wards, aided by his first assistant, Dr. Moritz Kohn, and other gentlemen, who carry out the various orders. Each ward has its nurses and corps of assistants, the male patients having male nurses, and the female, female, except in the variola wards, where all the nurses are female. At seven o'clock in the morning the professor meets his class of students in the amphitheatre adjoining the wards, and there delivers a clinical lecture upon the cases as they present themselves for inspection. Two wards are carefully examined each morning before the class, and lectured upon according to the importance of individual cases; if the patients are unable to appear in the amphitheatre, they are visited at the bedside. After the hospital patients are disposed of, dispensary cases are brought in: the name and a short history of each entered, an examination and diagnosis made, and the requisite prescription and advice given; if there happens to be an interesting case, the opportunity is seized for a lecture upon its leading features. In this way two hours or more are passed every morning in examining old and new cases, and in studying them as changes appear from time to time. Unless the case be an unsuitable one, he is sent from student to student for examination, the pupil being taught not only to recognize disease at a distance, but to become acquainted with its feel and near appearance. By taking two different wards each day, the six wards will be visited every third day, not including the variola wards, which are seen separately by the professor and such of the students as máy desire to study this disease. This arrangement allows one to see the same cases twice a week, to follow their course and watch the result of the treatment. Exclusive of the above mentioned examination, the first assistant, with his staff, makes a thorough visit to all the wards every day, and reports if there be anything amiss, or if any new cases of interest have entered. The patients brought into the General Receiving Ward are supplied with the clothing of the institution and conveyed at once to the Skin Department, where they are examined, then bathed or not, as the case may require, and placed under treatment. The whole material of these wards is at the disposition of the gentlemen who have been former first assistants of the department, for the purposes of study and lecture, there being daily three or four lectures by these "Docents," as they are termed. The first assistant in this department is elected for a service of four years, and may be re-elected, according to the wishes of the directors. Drs. Auspitz, Neumann, and Kohn, names already well known in the dermatological world, fill the positions of Docents in this department; and, without their kind assistance and instruction, the young student of dermatology would become discouraged amid the mass of strange material he is about to study. In connection with the wards are the baths, which form such an important feature in the treatment of this class of diseases. They have a large building devoted to the purpose, and the arrangements are complete for furnishing any kind of bath that the case may require. And now to refer to some of the most important diseases of the skin as found in

Austria. As before alluded to, it is a fact well known among dermatologists that diseases of the skin assume different characters and appearances in different countries—heat, cold, physical and moral condition having a decided influence upon the skin and its functions. The wards of the General Hospital of Vienna, which may be considered as typical of the dermatology of Germany, contain diseases of all kinds and grades, from the simple case of scabies to the most obstinate and malignant affections, including certain diseases more commonly met with in Vienna than elsewhere. One disease in particular appears to be confined to Austria and Southern Germany. I refer to the prurigo as described by Hebra in his work, and designate it the prurigo of Hebra, because it is not the prurigo of English or French writers, but a distinct disease, with well marked symptoms, running a course emphatically its own, and totally unlike the diseases known in other countries as prurigo. In Vienna this affection is common, there being always from five to ten cases of it in the hospital at one time, whereas in London, among four thousand skin diseases, I did not see one case of prurigo of Hebra. Several of the leading dermatologists of London informed me that they had never seen a case of prurigo as described by Hebra. At the St. Louis Hospital, in Paris, where, in the course of three months, I saw about six thousand patients, only two cases of the purigo of Hebra appeared. One of them was shown to me by M. Hardy, who considers the disease under the head of strophulus, and calls it "*Strophulus pruriginеux.*" The other case presented itself in the clinic of M. Bazin, who believes the affection to be a scrofulous one, and designates it "*Scrofulide boutonneuse bénigne.*" M. Hardy informed me that the disease was met with quite often in summer, but rarely in winter, and that it was very amenable to internal treatment, this being relied upon exclusively. This statement is totally at variance with the views of Hebra, who considers the disease as one of the most obstinate, and though tractable to a certain extent, yet positively incurable. The two cases I saw were undoubtedly the prurigo of Hebra, though light and of a different grade from those met with in Vienna. Why this disease should make such ravages in Austria, be so rare and mild in France, and altogether wanting in England, is one of those enigmas which at present baffles every attempt at solution. Here I can merely touch upon this interesting disease; but the subject is open for investigation, and is one worthy of study. A disease very commonly met with in Austria is lupus, which shows itself in all its forms. I remember, in the winter of 1868, counting thirty-five cases in the department at one time. This affection runs a more virulent and obstinate course here than in France or England. Nowhere else in the world can such terrible cases of lupus be seen as in Vienna; and the treatment is correspondingly severe, the French mode of management having no effect whatever. Cases of scabies are always presenting themselves in numbers, and many of them of long standing, and accompanied by a great amount of eczema. Eczema, uncomplicated, in all its forms, is always to be found in abundance here, as in other countries. Psoriasis, though very common in Germany, does not exist to such an extent as in England, there being perhaps, on an average, but six or eight cases in the wards at one time. Diseases of vegetable parasitic origin are comparatively rare in Vienna. During a stay of more than a year in the hospital, I saw only four or five cases of favus; in Paris, as many might be seen in the course of a few weeks. The other parasitic diseases, tinea tonsurans, circinata, and versicolor, occur much oftener. Parasitic sycosis very rarely occurs in Vienna—so rarely, indeed, that for a long time its parasitic nature was denied in that city; yet in Paris this is one of the most frequent of the parasitic diseases. Lichen scrofulosorum appears at the hospital now and then, perhaps in the ratio of a dozen cases or more through the year. Of lichen ruber, throughout the year only three cases applied at the department. Not long since, through the kindness of Dr. Tilbury Fox, I had the pleasure of seeing a case of this rare disease in London. Pemphigus is also a rare disease in Vienna; though I am not prepared to say that it is more so than elsewhere. Purpura, ichthyosis, alopecia, areata, zoster, acne, and the numerous other diseases are all found in about the same ratio as in other countries. At certain seasons of the year, variola is rife and the wards are full; but the disease is so thoroughly understood, and the treatment so judicious, that the mortality in the department reaches only the incredibly small figure of three per cent. Concerning the treatment of these diseases, and the various methods pursued in the three great medical arenas of Europe, many interesting facts might be stated; these, however, must be reserved for a future occasion.—*L. A. Dhuring, M. D., in Medical Times.*

SULPHATE OF QUININE IN THE TREATMENT OF SPONTANEOUS ERYSIPELAS OF THE FACE.

By Dr. Perroud, Physician to the Hotel dieu de Lyon. Translated from Annales de Dermatol. et de Syphilig., Deuxieme Annee, No. 4, by James C. White, M. D., Boston.

It is not the tonic, neurosthenic action of sulphate of quinine, nor its anti-periodic action that we have desired to take advantage of in the following experiments, but certain properties it possesses with regard to the globules of the blood, which have been the subject of interesting investigations. These investigations, as well as the researches lately made in connection with the erysipelatous process, have served us as a guide; and inasmuch as they have determined our therapeutics, it is necessary that we should recall them in a few words.

Two years ago M. Vulpian, after Koster, Volkmann and Steudener, announced the presence of a great quantity of white blood corpuscles infiltrated throughout the skin of parts affected by erysipelas. This observation was soon confirmed, and it appears to be demonstrated to-day that the infiltration of the skin by a great quantity of leucocytes forms one of the principal elements of the erysipelatous process, and that to this is to be attributed, in great part, the swelling of the affected parts. It appears to be shown also that these leucocytes may be rapidly re-absorbed and disappear, for they are not to be found two or three days after the disappearance of the swelling; moreover, it may be seriously regarded as probable that these elements have not been formed in the parts thus affected, but that they have penetrated thither by transudation through the walls of the vessels.

This last opinion is not incontestably admitted, we know, for many observers, among them K. Balough, in Germany, and Feltz, in France, deny this transudation, because they have not been fortunate enough to witness it, but their negative observations are too few to weaken positive results, which are already numerous.

Without pretending to give a complete account, it will be remembered that in 1846 M. Waller, of London, announced in the *Philosophical Magazine* that he had seen the white corpuscles of the blood pass through the walls of the vessels where no previous rupture existed. This observation remained unnoticed until within the last few years Conheim, in Berlin, Stricker, Prussach, in Vienna, and others, have investigated the subject, and arrived at the same conclusions. Other observers, too, have confirmed the results obtained by these German microscopists. Among French physicians may be mentioned Flayem and Vulpian, and before them Lortet and Rauvier, the first of whom demonstrated that the white corpuscles are able to traverse animal membranes (the swimming bladder of fishes), and the second that they were able to gain entrance within the pith of the elder and its cells, and that it is even possible at times to determine their presence within epithelial cells, whither they have penetrated.

It appears to be proved, then, that leucocytes may be extravasated without previous rupture of the capillaries, and it is extremely probable, as we have above stated, that this extravasation constitutes one of the principal elements of the erysipelatous process. On the other hand, M. Lortet has taught us that the amiboid movements of the white corpuscles of the blood are necessary to their penetration through the tissues; that a young and healthy pus easily extravasates; that an old pus, the leucocytes of which are sick or dead, extravasates badly or not at all. If, then, we are able to lessen the vitality of the white corpuscles of the blood and to diminish the movements of their protoplasm by a drug, it is to be presumed that their extravasation would become impossible, and that the erysipelatous process would find itself by this means blocked, or even completely arrested.

The problem reduces itself, then, to find a substance capable of destroying the amiboid movements of the leucocytes in such doses that it may not be poisonous to the patient.

M. Binz has devoted himself to this class of researches, and has studied the influence of various solutions, not only upon the vitality of infusoria, but of leucocytes held in suspension in serum, and has thus come to class the salts of quinine among the most poisonous. A solution of hydrochlorate of quinine one part in 800 immediately kills large infusoria, one part in 2,000 causes them to perish in a few minutes, and one in 20,000 in a few hours. The effect upon the white corpuscles is the same; if one adds to perfectly pure serum a drop of blood taken from an animal in full digestion, the amiboid movements may be seen to take place without hindrance; but if this experiment is repeated with serum containing $\frac{1}{2000}$ of hydrochlorate of quinine the movements of the white corpuscles are seen to be arrested without the least alteration in the red globules.

These data would naturally lead to the employment of quinine whenever a pathological tendency to the extravasation of leucocytes exists, in a great number of inflammations for example, and especially in erysipelas. But in what dose shall it be administered?

M. Binz, without approaching the question of erysipelas, thinks that in order to arrest the progress of a suppurative peritonitis it would be necessary to give 12 to 15 grammes of hydrochlorate of quinine in twenty-four hours; but it seems to us that, in erysipelas at least, so large a dose is unnecessary. We know that a solution one part in 2,000 will at once put a stop to the amiboid movement of the leucocytes, and that one part in 20,000 will arrest it after some hours. We know, too, that the quantity of blood in a person is about one kilogramme to 10 or 13 kilogrammes of the solid parts, and consequently that a person weighing 70 kilogrammes has 7 kilogrammes of blood. A dose of quinine expressed by the fraction $\frac{7000}{2000}$ or even $\frac{7000}{20000}$ ought then to be enough to influence the white corpuscles sufficiently and to render their extravasation difficult or even impossible.

It is upon these data that we have based our administration of quinine in the dose of 30 to 40 centigrammes daily, a spoonful every half hour, in order to keep the patient under the persistent and prolonged action of the remedy. We have not used the hydrochlorate of quinine, however, for this salt, although the most soluble and most easily absorbed, we have been unable to procure, and have employed the sulphate so much employed in hospitals. Sulphate of quinine not being destroyed in the circulating stream and being found again in the urine, we might expect a direct action on its part upon leucocytes during its passage through the blood, and consequently a happy influence upon the course of the erysipelas. These expectations have not been disappointed.

From all these facts it follows that sulphate of quinine, like all treatment, has its indications and counter-indications in erysipelas. We have tried to show some of the circumstances which interfere with its action; but we have also wished to show that it possesses other than its neurosthenic and anti-periodic properties which may be used to advantage. Is it now really its anti-diffusant action upon leucocytes which makes it so valuable in erysipelas? We are unable to affirm this at present. We need more observations and to apply a sort of counter-proof with other substances of reputed poisonous action upon the white corpuscles of the blood; but it may be affirmed that this hypothesis is in no way improbable, that pathological anatomy and physiological experiment give it an incontestable support, and that clinical observation is not unfavorable to it.

We believe, therefore, that we are able to conclude, from the preceding facts, that:

1st. Sulphate of quinine, administered in moderate and fractional doses, promptly and completely arrests the course of non-traumatic erysipelas of the face, and extinguishes it most frequently on the second and third day of its employment.

2d. The effects of this drug are less evident in erratic cases of the disease and in those which are influenced by other constitutional affections, like rheumatism.

3d. The recent investigations of microscopists upon the diffusion of leucocytes suggests that it is by opposing this diffusion that sulphate of quinine acts upon erysipelas.

4th. It will be interesting to study clinically, as a means of controlling this hypothesis, the action of other substances which experimentation has shown to be unfavorable to the diffusion of the white corpuscles of the blood. We reserve, however, for the present the publication of the researches we have undertaken in reference to this point with perchloride of iron.—*Boston Medical and Surgical Journal.*

EARLY HISTORY OF SURGEONS.

There was a time when the profession of a surgeon and that of a barber went hand in hand. By a charter of Edward IV "the barbers practicing surgery" in the metropolis were legally incorporated as "The Company of the Barbers in London." Their authority extended to the right of examining all instruments and remedies, and of bringing actions against those who practiced ignorantly and illegally. The friends of competitive examination will also be glad to learn that even so far back as the first of Edward IV, there were examinations for surgical candidates by the masters of the company. But the first association had too much of the barber element in it. Many persons practiced surgery without its leave, and at last an association, which styled itself "The Surgeons of London;" was formed at the beginning of Henry VIII's reign.

In the third year of that monarch it was enacted that no person within the city of London, or within seven miles of the same, should practice surgery unless he were "first examined and admitted by the Bishop of London or the Dean of St. Paul's," having "other expert persons in that faculty" as their assessors. In these associations it will be observed that surgery had thrown off the barber's basin; but the step was premature. The surgeons could not yet stand alone without the barbers, and in the thirty-second year of Henry VIII the Company of Barbers and the Company of Surgeons were united in one company, which still exists, with its hall, in Monkwell street, and its famous picture by Holbein, in which the "bluff King" may be seen giving their charter to the company. Thus the two trades—for neither could be called a profession—that of the basin and that of the lancet—were inseparably joined together until the eighteenth year of George II, when the union was dissolved and the surgeons were constituted an independent company. It was not until the fortieth year of George III that the company passed into the hands of the Royal College of Surgeons.

We have been thus particular in tracing the early history of surgery in this country, and in showing how one of the noblest callings sprang from base beginnings, because we wish to point out the fact that it is learning and science which raise a mere trade like that of a barber, with his soapsuds and his basin, into an enlightened profession, which, while it alleviates suffering and confers the greatest blessing on the human race, is capable at the same time of satisfying the highest intellectual aspirations. So long as the surgeon went about blood-letting and tooth-drawing, now dressing a beard, and now "breathing a vein," he was little better than a barber, and was called a "barber surgeon." So long as he merely looked at the outward shape and fashion of the human frame, and now and then picked a hole in it or scraped its outer coat with a scalpel, he was a mere tradesman and quack, and his calling proportionately poor and mean. But when he passed from the outside of the wondrous house in which we all dwell, and penetrated into its innermost recesses; when he measured and surveyed it; when he undertook to renovate and restore it—nay, when he was bold enough to mutilate and deface parts of it in order that the rest might remain and live; when he learned, after long and laborious inquiry, after generations of thinkers, each of which, as it came, caught up and carried on the lamp of science when its predecessor dropped it; when he learned, we say, so many of the secrets of humanity only to find how great his ignorance still was and how much remained for him to learn—then his base trade had passed into a divine profession, and to the knowledge of a sage he had united the humility of a child. This we take to be very much the position of surgery at the present day. A true surgeon may feel proud as he looks back to the time of Henry VII, and the days of Barber Surgeons' Hall, but as he looks forward and feels how short life is, and how slow are the steps of science, he knows that, however great her victories over ignorance have been, she has many more pitched battles to win over her enemy before he shall be finally subdued and laid prostrate at her feet.—*London Telegraph.*

A CASE OF TETANUS SUCCESSFULLY TREATED WITH CHLORAL HYDRATE.

By R. Wirth, M. D., Columbus, Ohio.

The following article is especially interesting as showing the influence of large and frequently repeated doses of this new but deservedly popular medicine.—[Eds.]

George Rackley, sculptor, thirty-two years old, moderately robust, and always before in good health, came under my care, under the following circumstances, on July 4th. On June 16th he fell into an excavation for a cellar, and received a lacerated scalp-wound, over the right parietal bone, near its junction with the occipital. He did not lose consciousness, and returned to his home unaided. Indeed, he considered his injury so trifling, that he neglected to see a physician until about four hours after the accident, when, on account of severe pain, medical aid was invoked. The surgeon found the injured scalp full of sand, mortar, etc., which he removed as well he could, the patient being very irritable, and saw fit to unite the wound by three or four points of interrupted suture. The patient kept his bed for three days, after which he returned to his work, his wound healing rapidly, and on the 4th of July it was cicatrized over its whole extent.

On Friday, the 1st of July, a very hot day, he went to the country, to put up a monument. He was overtaken by a severe thunder-storm, and thoroughly drenched. Being in a free perspiration when it commenced to rain, and remaining in his wet clothes until he returned home (about seven hours), he was much chilled. During the night or early next morning he experienced some stiffness about the jaws, and occasional slight contractions of the muscles of the chest and abdomen. Yet this was not severe enough to keep him from work on Saturday. However, on Saturday night, the stiffness about the face and the rigidity of the respiratory muscles had considerably increased. Nevertheless, he was able to see a physician next day (Sunday), who, thinking it was a rheumatic affection, in consequence of the wetting, advised him to take a good sweat.

Experiencing no benefit from this procedure, he managed on Monday (July 4th) to leave his bed with great difficulty and come to my office. The moment he entered he was compelled to let himself sink down, and could not utter a word. He was evidently suffering severely, though it was impossible to define from his appearance the nature of this suffering. In a few minutes the severity of the paroxysm, whatever it was, seemed to abate, and he was now able to give me with difficulty, and speaking rather indistinctly, most of the facts above stated. Recognizing the terrible nature of the complaint, I had him conveyed to his home, ordering perfect rest, and the following medicine to be taken: ℞ pulv. Doveri ʒ ij, morph. sulph. gr. ij. M. Divide in chart. No. 8. D. S. One powder to be given every three hours until relieved or sleeping.

His condition at this time was as follows: During a paroxysm his teeth were clenched, and could not be separated with a reasonable amount of force. The muscles of the neck, chest, and abdomen, were rigid, and felt hard as a board. He complained of severe pain in the region of the diaphragm and the abdominal muscles. The pulse was considerably accelerated, rising from 72 to 90 and 96. There was no pain in the head, and no derangement of the digestive organs. In fact, he experienced keenly the sensation of hunger, having been unable to take solid food since Saturday night. The paroxysms subsided at first in from five to ten minutes, leaving the body in a more or less rigid state, but admitting of a separation of the teeth to the extent of about one-third of an inch, enabling him to swallow fluid. (In addition to the medicine, strong beef broth and wine were ordered.)

July 5th.—The patient had slept little in spite of the large opiates. He had frequent paroxysms during the night, was very restless, though drowsy, and complained that he felt worse in every respect. Ordered the powders to be given every two hours.

July 6th.—The condition had not materially changed, except that considerable retraction of the head had taken place, which was more marked than yesterday, the occiput being buried in the pillow, the chin elevated. He was entirely unable to change his position by his own efforts.

The patient's bowels not having been moved for several days, four comp. cath. pills were taken with great difficulty by being first pushed far back toward the root of the tongue. No effect following, the bowels were freely moved by an injection, from which he expressed a sense of relief. Paroxysms were easily induced by any attempt to move him by a sudden touch, loud noise, etc. He impressed me with the idea that he was losing ground. He took, however, wine and beef broth in large quantities with relish, and seemed at least to have some relief from the opiate. It was therefore continued for another day, morphine gr. ¼ pro dosi, every two hours, being substituted for the mixture of Dover's powder and morphine. The patient was seen in consultation by Prof. Loving, of Starling Medical College, who sanctioned the treatment, and recommended its continuance.

July 7th.—There was even greater restlessness than the day before, the least touch bringing on a frightful paroxysm during which every muscle of the body seemed perfectly rigid, the body resting exclusively on the heels and the occiput. When the spasm somewhat relaxed, he was utterly exhausted, and grew evidently rapidly weaker. The body was bathed in a very profuse perspiration.

Seeing that the treatment so far followed (which had served me in a former case to an excellent purpose, the patient recovering) did not even give temporary relief, it occurred to me to try the chloral hydrate, not with an expectation of cure, for I thought the patient must die, but with the hope that its hypnotic effect might give the sufferer at least temporary immunity from his misery. I prescribed chloral hydrate ʒij, syrup. aurant. aquæ aa. ℥j. M. D. S. Tablespoonful every four hours. I watched the effect of this medicine with considerable interest and anxiety. The first dose did not produce sleep, but it appeared to me as if there were less restlessness and frequency in the paroxysms. The pulse was at first unaffected, then rose rapidly for a short period, and then fell as rapidly to 60 and 64. The second dose produced a tranquil sleep of two hours' duration, with the same variation in the pulse. On waking, the patient declared his inability to move, and a sense of "numbness over his whole body," which, however, disappeared in about ten minutes, and he thought he suffered less than before his sleep. However, before it was time to take another dose, the paroxysms appeared pretty much as before. In due time another dose was given, which produced the same effect, about two hours' sleep and immunity from spasms for about an hour more. The medicine had left no unpleasant sensation in his head or stomach, and he felt for the first time "as if waking up from a natural sleep." I had no reason, therefore, to change the treatment, and it was continued for a week in this way: every fourth hour thirty grains chloral hydrate with a glass of Rhine wine, which he preferred to any other stimulant, and as much beef or other animal broth as he could take, after waking up from sleep. The bowels were moved by injections.

At the end of this week his condition was as follows: The rigidity of the muscles of the face had almost completely subsided, so that soft articles could be masticated, which enabled me to add to the diet, eggs, tender meat, fruit, etc.; there was also evidence of yielding in the rigidity of the respiratory muscles; and there were no well defined spasms any more, as at first, but from time to time he complained of severe pain in the back, along the spinal column from the cervical vertebræ downward, also of pain and rigidity in the legs, especially in the left. It appeared, also, as if the effect of the medicine wore off sooner, his sleep after each dose lasting only from three-quarters to one hour. I therefore increased the dose, at first to thirty-five, and soon after to *forty grains*, and, instead of every four hours, a dose was given *every two hours*. This seemed to control spasm as well as pain completely. In the third week the patient slept at least sixteen out of the twenty-four hours, waking, however, frequently to take food or medicine. He was, however, entirely helpless, being able to move only his arms. His mind was always clear after waking up, and only occasionally he complained of slight headache. In the night he became frequently more restless, and was apprehensive of a return of the spasms, the approach of which he said he was able to foretell by a peculiar sensation "in the veins" (probably the nerves). He would then insist on taking the medicine every one and a half or two hours.

Up to this time the body had rapidly emaciated, the muscles becoming remarkably thin and flabby. Yet his appetite was always good, and he gratified it frequently and without stint.

July 25th.—The condition of the patient is to-day as follows: He feels much exhausted, but, owing to the greater relaxation of the muscles, he can with much effort turn on his side without aid. His pulse is feeble and very slow; the lips look cyanotic, and a peculiar pallor overspreads his face; his flesh feels sore, "as if pounded;" he has some pain along the spine, especially when he moves himself.

I now ordered the chloral hydrate to be given less often, and substituted quinine and compound tincture of cinchona. At the end of two more days the chloral was entirely discontinued (July 27th); I had, however, reason to regret this, for in the following night I was summoned in great haste to his bedside, the messenger stating that he was dying. I found him bathed in sweat more profusely than ever, unable to speak and to swallow; the body rigid. To give medicine by the mouth was out of the question. I let him inhale chloroform (mixed with ether) very cautiously, and had the unexpected satisfaction to relieve the rigidity, without producing sleep. He could now swallow, and took some brandy, which evidently did him good, the pulse becoming fuller, and the deathly pallor from his countenance disappearing. At his urgent request, he resumed the hydrate of chloral, and continued it for three days longer without interruption.

This was his last paroxysm. August 1st, he was slowly gaining in strength; the last trace of rigidity had disappeared; but, fearing a relapse, I hesitated to discontinue the medicine suddenly again. I concluded to withdraw it gradually; accordingly, he took three doses on the 2d, 3d, and 4th, two on the 5th, 6th, and 7th, and one only at bedtime on the three following days, after which it was entirely withheld, without any unpleasant symptom following. During this time he gained daily in strength. On the 7th he was able to get out of bed alone, and move himself slowly by pushing a chair before him. On the 14th, he was able to walk about the room with a cane; and to-day, August 17th, he takes short walks in the open air. Besides, since he has commenced to exercise, he is rapidly gaining in flesh.

REMARKS.—Recoveries from tetanus are sufficiently scarce to justify the publication of a successful case, but, what especially induces me to do so in this case is, the remedy employed, to which the patient, in my opinion, unquestionably owes his life. Opium, up to this time looked upon as the sheet-anchor in this disease, had been fairly tried, and under its administration the disease made rapid progress. The chloral hydrate was given, in the hope to give relief, not to accomplish a cure. Yet it seemed, almost from the first dose, to modify the disease, and soon it was evident that it was able to hold it perfectly under control. This inference is justified from the fact that the spasms returned after its sudden withdrawal, and their cessation after its readministration. I have since seen in a journal that chloral hydrate is claimed to be an antidote to strychnia; if this is true, it would explain its action in this case—tetanus produced by strychnia differing in its symptoms in no way from idiopathic tetanus. Yet it does not appear to me to act exactly in the nature of an antidote. The real nature of tetanus is, to-day, in spite of our advances in the pathology of the nervous system, as unknown as in the days of Larrey and McGregor. Whatever it may be, the occasional recoveries prove that the force of the irritating agent may gradually spend itself, and leave the spinal column unchanged and intact. Death from tetanus is the result of the rigid and tonic contraction of the respiratory muscles, and consequently is death from asphyxia (or in chronic cases, perhaps, from slow starvation on account of the interference with deglutition). Any agent that has the power to antagonize these contractions, thereby keeping up the possibility of respiration and deglutition, must therefore be, with suitable dietetic measures, a proper remedy in tetanus. That in this respect chloral hydrate is far superior and safer than opium, I am fully convinced. Had I pushed the administration of opium much further than I did, it likely would have been a nice point to decide whether the patient had died from the effect of opium or tetanus, or of both combined: the large and long-continued administration of the chloral hydrate produced not a single alarming symptom or even unpleasant effect. In this connection it may not be improper to state that in all, from the 8th of July to the 5th of August, nine ounces and two drachms of the medicine were administered in doses of thirty, thirty-five, and forty grains, some nights as often as every one and a half hours, but ordinarily every three or four hours. In conclusion, I would say that, in a given case, where such doses seemed not to control the spasms, I would not now hesitate to give larger amounts; yet prudence would require one to commence with not more than from thirty to forty grains.—*N. Y. Medical Journal.*

NAVAL RANK.

BELOW we publish resolutions introduced by Dr. Babcock, at a meeting of the Alameda County Medical Association, held at its Rooms, in Oakland, California, October 17th, 1870, which were unanimously adopted:

WHEREAS, Of late, repeated and persistent insults have been offered our professional brethren in the U. S. Navy, by the authority of the Navy Department, degrading them in rank and position; lessening by example the respect due their profession, and contracting their sphere of usefulness; and

WHEREAS, In every civilized community throughout the world, save in our Navy, the profession of medicine is considered, at least, equal in dignity and respectability to any other profession; and

WHEREAS, In our service, the members of the medical staff are selected by competitive examination from among the graduates of our medical schools, while the line officers are selected to be educated at our country's expense from among the uneducated boys of the community, by favoritism, by relationship, or, as has lately been proven, by purchase; and

WHEREAS, Rank and command are distinct ideas, having no necessary connection; there being a recognized necessity for *one* commander in all military operations, to show to whom the other officers are subordinate for the time being; and

WHEREAS, If physical courage and personal exposure are the only tests of merit, no corps can show, during the late war, for example, a larger proportion of killed by the enemy, by fire, by water, or by the more deadly and insidious foe—disease, than the medical officers of the Navy; therefore be it

Resolved, That we consider the stigma to which they have been subjected as applying to the profession at large, and, while it is unremoved, we consider that no young medical man, having a proper regard to his self respect, can accept an appointment in the medical corps of the Navy, and subject himself and his profession to the indignities which the self-constituted and newly-born "Aristocracy of the Line" impose.

Resolved, That we view with pain and sympathy the position of the senior officers of the medical corps, whose long service now renders it impossible for them to resign and commence life anew: and we call upon our Senators and Representatives in Congress to recognize their position as co-equal with the highest in the service, by giving them military rank, such as is justly enjoyed by the medical staff of the Army, and by that in the services of each of the civilized nations of the world, together with such increased emoluments and promotions as will recognize their invaluable services to our country, and recompense them for the insults and oppression to which they have most unjustly been subjected.

Resolved, That a copy of these resolutions be sent to each Senator and Representative from this State, and that our delegates to the State Medical Society be instructed to bring this subject before that body for its action.

T. H. PINKERTON, M. D., *President*.

S. C. HOLMES, M. D., *Secretary*.

—*Buffalo Medical Journal.*

ENLARGEMENT OF LONG ISLAND COLLEGE HOSPITAL

THE Regents of the Long Island College Hospital, finding their present accommodations insufficient for the growing demands of the city, have contracted for the erection of a new wing to the present hospital buildings, to be completed and ready for the reception of patients by the first of the February ensuing.

The new building will occupy nearly the entire south front of the present hospital grounds, on the corner of Henry and Amity Streets. It will have a frontage of one hundred and forty-eight feet on Amity Street, by thirty-two on Henry Street, and is to be three stories high.

In erecting the eastern portion of the new wing, the opportunity has been embraced of improving the facilities of the College by the construction of a new Amphitheatre and operating-room, forty-four by thirty feet, and twenty-eight feet high. This will be arranged according to the most improved models of such rooms, and will seat, for the present, about two hundred and fifty persons. It can, however, be readily enlarged, when necessity requires it. The entire building is to be constructed on the most improved principles of modern hospital structures.

Two years ago the Regents felt impelled, by the constant demands made upon them, to erect a new wing for a lying-in department, and for the treatment of diseases of females. This was done upon the north side of the grounds, fronting on Pacific Street. The new buildings, now in process of erection, will be somewhat similar in construction, but greater in capacity, and when finished will add greatly to the appearance of the hospital grounds, and to the capacities of a noble charity.

This new improvement will give to the Long Island College Hospital facilities for clinical and hospital instruction possessed by few institutions of the country.

Editorial.

PUBLICATIONS RECEIVED.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASE, including the recent investigations on the subject. By Freeman J. Bumstead, M. D., Prof. Venereal Diseases, College Pysicians and Surgeons, New York, etc. 3rd Edition. Revised and enlarged, with illustrations. Philadelphia: Henry C. Lea. 1870.

The previous editions of this work have been so long before the public and been so generally known as to need no description or recommendation. The author, in his preface to this edition says:

"The whole work has undergone a thorough revision, and many changes and additions have been made, the chief of which are the following: In Part First, the subject of the treatment of stricture has been re-written, and due importance has been given to the operations of rupture and internal urethrotomy. Parts Second and Third, relating to the chancroid and to syphilis, have been remodeled and in a great measure re-written. The subject of visceral syphilis especially, which was almost unknown at the publication of the first edition, has received the attention which more recent investigations require. The chapter on syphilitic affections of the eyes has been revised and brought up to the present level of ophthalmic knowledge by one whom I regard as unexcelled and rarely equaled in his specialty, Dr. E. G. Loring, Surgeon to the Manhattan Eye and Ear Infirmary. The text of the present edition has been compressed and portions omitted, especially when relating to subjects now fully established and no longer controversial; yet the size of the present volume is increased by sixty-four pages. My intention has been, as heretofore, to supply a practical treatise which should meet the wants of the busy practitioner, and present the subject of venereal diseases as held by the best authorities of the present day."

PRACTICAL ANATOMY, a manual of dissections. By Christopher Heath, F. R. C. S. Edited by Wm. W. Kean, M. D. Philadelphia: Henry C. Lea. 1870.

In the introduction we find many practical hints, of value to the beginner, not found in other works of the same kind. The general division of the work is similar to others, but instead of commencing with a description of parts to be found after the integument, fuscia, etc., are removed, we find first quite a space devoted to superficial anatomy. The mind is prepared for its work beforehand, parts are anticipated before dissected out. So that the student knows what he is after, before he finds it. Many operations are described for the student to perform, which in no way injure his subject for further dissections, familiarizing him with practical surgery to a certain extent, diversifying his labors, thereby increasing his interest in the study, to say nothing of economizing every part of the cadaver. The book is filled with illustrations, many of them familiar to us, while many others are original, and all of them are well executed. In addition to the illustrations proper, there are quite a number of diagrams, which will assist the student to unravel many of the more complex arrangement of parts better than the ordinary cuts would do. The book is of convenient size; its typographical execution is excellent, and we cheerfully recommend it to students of anatomy.

N. W. W.

OUR literary publishing friends are promising great things for intellectual delectation the coming year.

Messrs. Fields, Osgood & Co. maintain their high reputation in their three periodicals—*Atlantic Monthly*, *Every Saturday*, and *Our Young Folks*. Looking over the fine illustrations in *Every Saturday*, we are astonished at the advance which has been made in the wood engraving art, both as regards the celerity of production and the quality of work.

Peterson's Monthly comes with its usual array of stories and entertaining items, and last, though to the ladies not least, the fashions.

Lindsay & Blakiston's Physician's Visiting List, for 1871. Twentieth year of publication.

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